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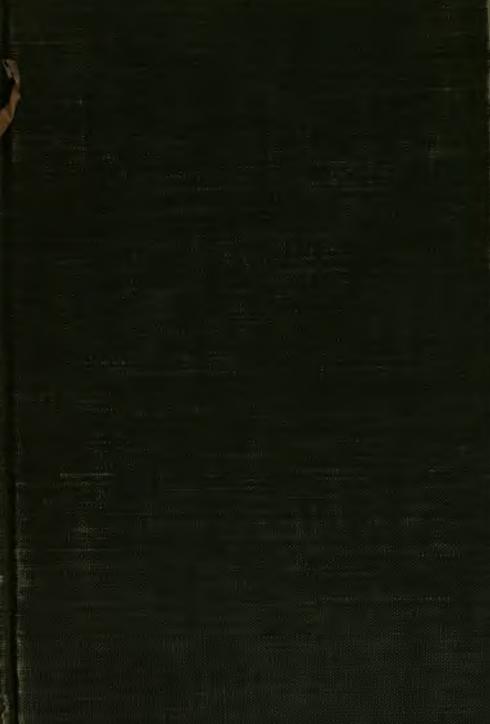
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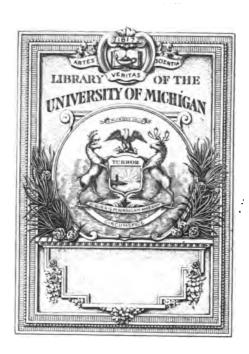
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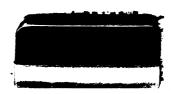
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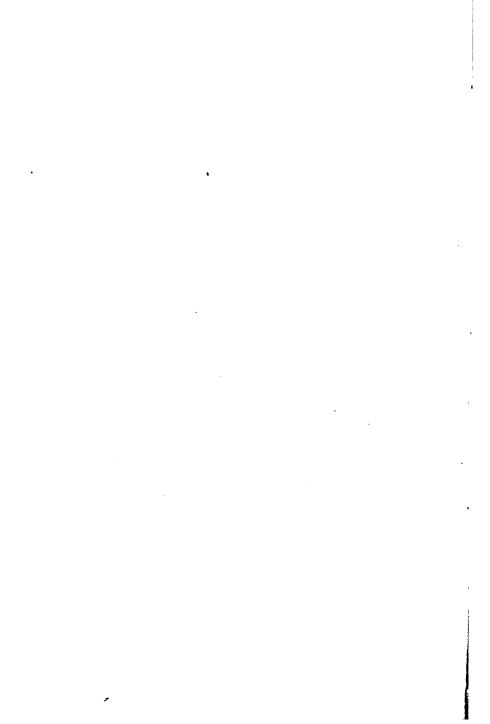




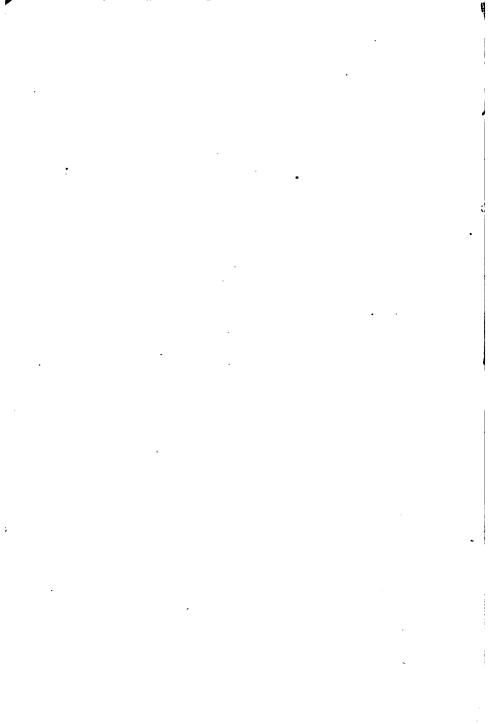




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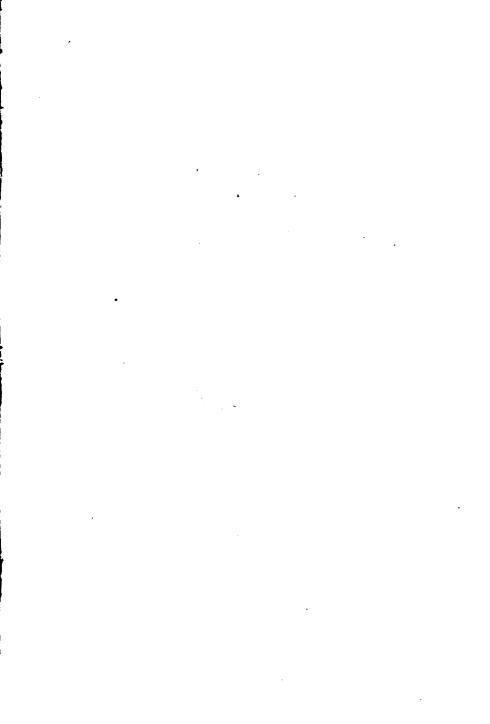




FIG. I.—ITALIAN RENAISSANCE GLASS BY WILLIAM OF MARSEILLES.

In the Museum (No. 634—1902).

STAINED GLASS

LEWIS F. DAY,

Author of "Windows-A Book about Stained Glass."

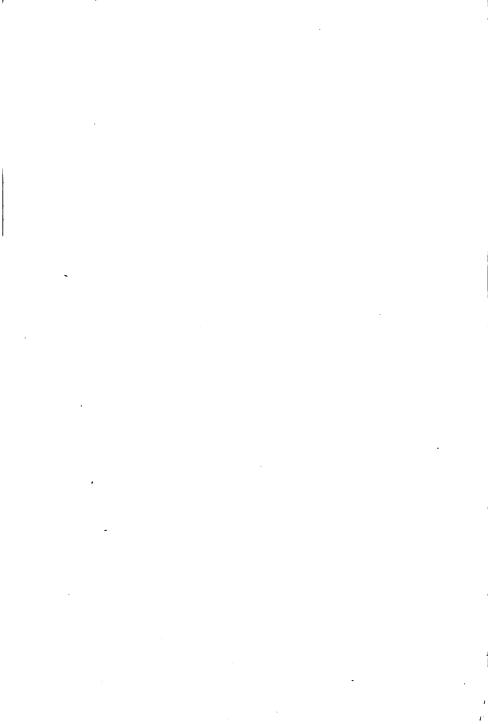
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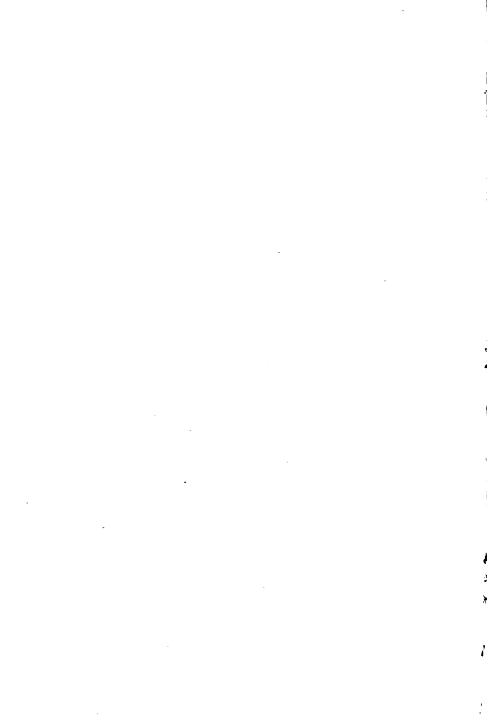
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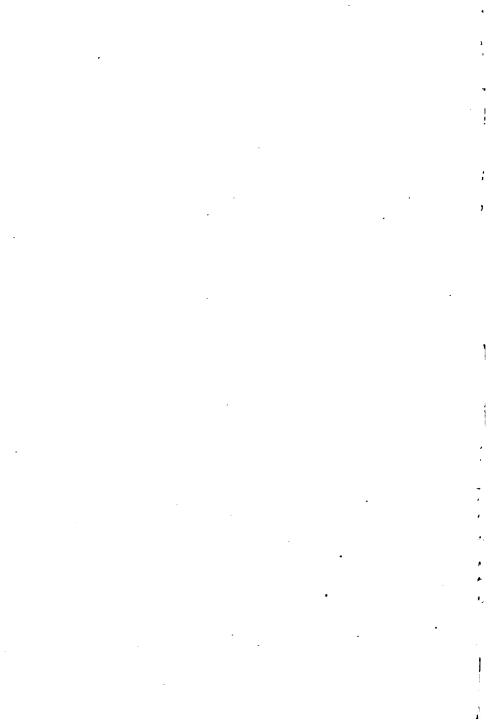
## PREFACE.

The aim of this handbook is to trace, as clearly as possible in a short compass, the historic sequence of stained glass—the development, that is to say, of its design, and the gradual perfection of its technique. It has not been thought necessary to dwell upon the period of its decadence.

In choosing my illustrations almost entirely from glass in the Victoria and Albert Museum or from drawings belonging to it, I have deliberately sacrificed the opportunity of making a much showier book; but it seemed to me that in a handbook for the Museum that was the only right thing to do. It may be the means, too, of drawing attention to the tracings of old English glass made by the late Octavius Hudson, and to the interesting sixteenth-century working drawings for domestic work in the Art Library.

LEWIS F. DAY.

13, Mecklenburgh Square, London, W.C.
November, 1902.



#### INTRODUCTORY.

THE term "stained glass" applies, if we go to the root of the matter, to all glass which, by the addition of some metallic oxide to the ingredients, has been coloured in the melting pot. Strictly speaking, the sham jewels of the ancients, the Portland Vase and the little phials zigzagged with blue, white, and yellow, are stained glass. But that is not what the words imply. They have been, as it were, appropriated, and are commonly taken in a more limited "Stained glass" is understood to signify windows, the production of which (beginning as it practically did with Gothic Architecture, or, at the earliest, with the Byzantine and Romanesque out of which it was just emerging, and declining after the early part of the sixteenth century, when the Renaissance still owed much to the survival of Gothic tradition) was an art, we may say, identified with the Middle Ages.

No art certainly is more thoroughly informed with the spirit we call Gothic. It naturally followed the course of Mediæval design, and differs from enamel, sculpture, illumination, wall painting, and so forth, only in as much as the nature of the material and the exigencies of its manipulation made special treatment necessary, or as the qualities of the glass tempted the worker in the direction of its peculiar beauties.

The design of a window is, mutatis mutandis, that of a seal, an ivory, a brass, a monument. Windows are set out on a grand scale much on the same lines as triptychs and other

devotional panels of the same period are designed in small, with subjects in medallions, or in panels, with figures under canopies, and pictures gradually as years went on more pictorially conceived. And in the character of the drawing and detail, there is no wide difference between glass-painting and other crafts. Such as it is, it is due more to the conditions of cutting, glazing, and painting upon glass, and to the way a window is built up, than to any determination on the part of the artist to go his own way. No doubt he made the most of the gorgeous quality of vitreous colour; but so did the enameller, whose work alone is comparable to it in this respect.

Stained glass, as the term is used, is taken to include also painting upon glass. As a matter of fact, glass staining and glass painting are two quite different things. To build up a mosaic with pieces of coloured glass, each separate tint cut out of a separate sheet of "potmetal," is one thing; to paint upon a sheet of white or coloured glass is another thing altogether. In fact, they are not merely two different ways but two opposite ways of arriving at a result. But there is this excuse for grouping them (as it is the custom to do) under one title, that from very early days the two processes of work were used together.

The very first windows were in all probability mosaics of unpainted glass. Logically it would seem as if this must have been so, and that, since painting was for a long while only used to supplement the work of the glazier, the stained and painted windows of the twelfth and thirteenth centuries must have been preceded by glazing pure and simple. But the glass in which least paint is used (as for example, the geometric pattern window from Cologne (Fig. 2), in which only the small square blocks upon the broader bands are painted) is not always the most ancient; and though early windows of the pure mosaic kind exist, there is nothing to

show that they are of earlier date than others into which painting (of the subsidiary kind before mentioned) enters.

In fact, the existing remains even of twelfth-century glass do not distinguish themselves by any want of paint upon



FIG. 2.—GEOMETRIC PATTERN GLAZING AT COLOGNE CATHEDRAL.

From a water-colour sketch in the Art Library of the Museum.

their surface. They are to be recognised rather by a severity of treatment in the design alike of figures and ornament which bespeaks Byzantine tradition. Scraps of such early work are to be found in this country, for example, in the tracery of certain windows at York Minster; and remnants of more importance, if not whole windows, in France and Germany; in the cathedrals of Chartres (West windows), Le Mans, Dijon, (North transept), Angers, Vendôme, and at the abbey church of St. Denis; in the cathedral at Augsburg (claimed by the Germans to be eleventh-century work and the earliest windows extant), and at Strasburg, where, in the thirteenth-century windows on the North side of the nave, are to be found figures of kings or emperors evidently saved from the older church (which was burnt down) and incorporated in the glazing of the present building. These, by the way, are beautiful, which the Augsburg windows are not. The character of the earlier ornamental detail, reminiscent of the Romanesque, is shown in the fragment of a border (Fig. 3), preserved in the museum.

Although, therefore, there is not very much existing glass to which we can with certainty ascribe a date earlier than the thirteenth century, there is enough to prove to us by the evidence of our eyes that stained glass had by the twelfth century been brought to a point of execution arguing the development of a craft already long in practice; and the ever-quoted Theophilus, writing presumably in the latter half of the twelfth century, refers to it as though that were so. An interdict of 1134; restricting the Cistercians to the use of white windows only, argues already at that date luxurious indulgence in coloured glass; and Church records before that tell of stained glass. There is an account, for example, of a series of windows for the decoration of the Benedictine Monastery at Monte Cassino in the year 1066. There are yet to be discovered, no doubt, incorporated in thirteenth century or even later windows, fragments of twelfth-century glass; they are certainly to be found at Bourges; but only an experienced antiquary could hope to identify them with any certainty. It is an interesting problem for his solution, how much of the glass in Romanesque or Early Gothic churches may belong to the twelfth century or earlier, and what is the very earliest date to which existing examples can safely be attributed. The further question as to howearly windows (of which no trace remains) may conceivably have been executed, leads yet deeper into the mists of speculation.



FIG. 3.—EARLY FRENCH DETAIL.

From a fragment of a border in the Museum (No. 5814—1858).

The idea of a mosaic of translucent glass came to us doubtless, like other good things, from the East—the plaster windows of Egypt, though for the most part later in date than much of our leaded work, carry on most certainly an ancient tradition, and point to the likely origin of European glass. There is record of a settlement of Venetians at Limoges about 1000, and they were closely in touch with the East.

In Europe stained glass was the nursling of the Church, and takes accordingly, in the main, ecclesiastical shape. much so that the study of Gothic glass resolves itself into the study of church windows. Few indeed of the windows which must once have enriched the palaces and public halls of the Middle Ages (such as the Late Gothic windows in St. Mary's Hall at Coventry) remain to us. As to domestic glass, it is a luxury almost unknown until about the sixteenth century. Soon after that enamel colours came into use, and it is in domestic work that their use in glass painting was to some extent justified—by the Swiss at all events, who were masters of glass painting in miniature. Early Renaissance glass, it was said, may be regarded as the aftermath of Gothic. This later and more pictorial art was a craft in itself, only distantly related to the earlier monumental work chiefly in mosaic.



Fig. 4.—One of a Series of Small Shields surrounding a Picture of Daniel before Nebuchadnezzar.

From a panel of Swiss glass (1660) in the Museum (No. 3005-1857).







FIG. 5.—EARLY QUARRIES AT LINCOLN.

From tracings in the Art Library of the Museum.

### II.

#### THE STYLES.

Glass has been divided by Mr. Winston, who based his classification upon that of Rickman in his Gothic Architecture; and, with regard to Gothic glass at all events, there is no occasion to depart from his periods. But it is easier to define styles than to confine them within fixed dates. It is a simple matter to say that at a given time a fashion prevailed. To fix the year at which a given work in that fashion must certainly have been executed is quite another thing, and a dangerous one. Who shall say when a practice, which marked itself at a certain date, may, in isolated cases, have occurred? We naturally attribute glass in which we trace Byzantine influence to the twelfth century, but we know that, as a fact, artists were working in one part of the country towards naturalism, when in another they still kept close to a fixed tradition.

The date of a particular example may be determined by documentary evidence; but that does not tell us with any certainty that similar work elsewhere belongs to the same year. The character, for example, of the glass at the Sainte Chapelle (portions of which have strayed from their home and found a resting-place in the Museum) does not simply

mark a period; it marks also the difference between what was done in the neighbourhood of Paris and in the outlying provinces where fashion did not move so briskly, to say nothing of more distant England, where again national and local tendencies affect design and execution.

Plainly as the historic periods may, at their most characteristic, be marked, the periods of transition encroach so upon them that it is really impossible to draw the line except between sufficiently divergent examples, and it is wiser not to try and draw that line too closely. Winston, for example, gives us as the date of the Decorated Period the year 1280. But the earlier Decorated work has, by his own admission, so much the character of Early English that, but for a tendency towards more natural foliation of detail and the omission of the cross-hatched background to grisaille, it is hardly to be distinguished from other work of the century; and it would be at least as logical, and less confusing, to include the transitional work of the last years of the century in the Early English period. It is not really till the end of the reign of Edward I. (1307) that the style of the fourteenth century asserts itself pronouncedly. The omission of the crosshatched background is a detail slight in comparison with the flourishing of natural foliage, with the new departure in technique involved in the use of silver stain, and with the practice of combining in somewhat equal proportions grisaille and colour in the same window. The close of the century gives a more convenient line of demarcation, in any case arbitrary.

The precise beginning of the Renaissance spirit, marked as its forms ultimately were, is again impossible to date. The fresh spurt in glass-painting at the end of the fifteenth century may be taken as the mark of the budding Renaissance, just as the Early Renaissance may be considered to be the last fruits of Gothic. When two styles run parallel, as did the Gothic and the Renaissance, it is often only by the

accident of architectural, ornamental or other detail, that they are distinguishable—if indeed distinction should be made between them. The famous series of windows at Auch might safely, but for Renaissance details in them, be classed as Gothic: the traditions of Mediæval workmanship are faithfully observed throughout.





FIG. 6.—Parts of Two Side-lights of a Jesse Window from the Sainte Chapelle at Paris.

In the Museum. Given by Henry Vaughan, Esq. (No. 5-1881).

The design of glass-painting followed loyally in the steps of architecture of which it was, and is, the ally. That is to say, glazier and glass-painter worked in the manner of the time, knowing no other. In designing windows for a church of earlier date they naturally accommodated their design to the shape of the window opening; and that may have

necessitated some modification of the lines on which they would traditionally have worked; but they had never any thought of adopting the style of an ancient building—that was a futility reserved for the nineteenth century.

The course of glass design is, consequently, the course of Gothic and Renaissance architecture (and glass is conveniently classed according to those styles) but it must be remembered that, waiting as it did upon architecture, it kept naturally a little in the rear of it as it advanced. Still Rickman's division of Gothic Architecture into Early English, Decorated and Perpendicular holds good. Winston, to whose "Hints on Glass-Painting" we owe our first introduction to the "styles" of Gothic glass, accepted them; and we may, as far as Gothic is concerned, in the main accept Winston's classification, as follows:—

Early Gothic to about 1280 (leaving out of account the earlier Byzantine, barely represented in this country).

Decorated Gothic, 1280 to 1380.

Perpendicular Gothic, 1380 to 1530.

A slight shifting of these dates will make these periods easier to remember, even if it does not actually more closely fit them, thus:—

Twelfth century and earlier, Byzantine.

Thirteenth century, Early Gothic.

Fourteenth century, Middle Gothic, or Decorated (in Germany, Geometric Gothic).

Fifteenth century (and later so long as Renaissance forms do not occur), Late Gothic, or Perpendicular (in France, Flamboyant; in Germany, florid Gothic)—though perhaps it is straining the point of convenience to ascribe the beginning of the last Gothic period to the fifteenth century: it may be said to begin some twenty-five years earlier.

It has always to be remembered that style did not advance

in one straight line, but here encroached and there hung back, so that it is impossible, apart from documentary evidence (even if that were always to be trusted) to speak certainly as to the precise date of a window. Whatever is in the manner of a period belongs, for all practical purposes, to that



Fig. 7.—Early Grisaille at Salisbury, with Cross-hatched Ground.

From a tracing in the Art Library of the Museum.

period, no matter what the precise date of its execution. Heraldry is often of great assistance in fixing a date.

Just as the Gothic periods overlap, so do the Gothic and Renaissance. There is, in fact, a period in which Gothic is so evidently in a state of transition to the Renaissance that it may well be described as Transitional. It may be Gothic glass with every indication in it of the coming change, or it may be Renaissance not yet fully understood, or with lingering traces in it of the expiring manner. There is abundant and most beautiful work of this character halting as it were between two manners and not justly to be described as pledged to either.

The best Renaissance work in glass was done well within the



FIG. 8.—SHIELD AT NORBURY CHURCH, DERBYSHIRE.

From a tracing in the Art Library of the Museum.

first half of the sixteenth century. The Cinque-Cento certainly embraces more than the best. Later work ("intermediate," Winston calls it, between old glass and modern) belongs already to the period of decadence, which there is no occasion

to subdivide into stages of decay. The falling-off was gradual but sure. In the seventeenth century the painter had more and more his own way, not, alas, by any means the way of glass. In the eighteenth, glass becomes of less and less account in the hands of the painter, and the art all but dies outright—to revive only in the nineteenth, when, with the Gothic Revival, it entered on a new lease of life.

### EARLY GOTHIC.

The earlier the window the more emphatically it was mosaic, that is to say built up of a great number of small pieces of pot-metal glass held together by strips of lead—glaziers' work in short. It is true that the glass was also painted; but, as the tracings from Canterbury (Fig. 9) clearly show, the paint was strictly subservient to the leaded glass. It was an opaque brown pigment, not used as colour but only to stop out or subdue the light.

The leads gave naturally a broad black outline to the forms which they surrounded, very valuable in defining them and giving brilliance to the coloured light between; but it was not possible by means of them to give small detail; a leaf, for example, would be represented by a heart-shaped piece of green glass, but not the veins of it, nor the serrations of its outline; to represent these it was found necessary to resort to the brush. As a matter of fact, the outline itself was not left to be given by the leads, but was painted round the glass, the lead partly covering and greatly thickening it.

The pigment used was vitreous, consisting, that is to say, of powdered glass (or its components) mixed with finely-ground oxide to colour it, copper oxide according to Theophilus, but analysis of twelfth and thirteenth century glass gives only peroxide of iron, with perhaps some oxide of manganese. That is what modern glass-painters use. It was mixed with some vegetable medium (such as gum or sugar), eventually burnt away, but giving it hold upon the glass until the fire fixed it. For the glass, when painted, was put into the kiln and fired to about a red heat, at which

temperature the powdered glass was dissolved and melted into the surface of the pot-metal, incorporating itself and the accompanying metallic oxide with it. This glass paint (always brownish in colour) was opaque, and was used only to stop out the light, in the first place to stop it quite out, as it did when solidly applied. If it happened to be thin, or the brush not to be fully charged, it gave a line which was only

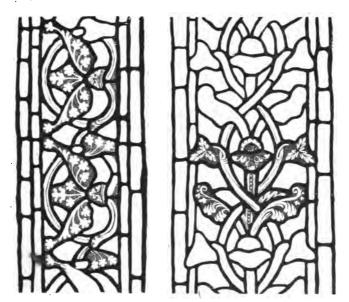


Fig. 9.—Early Borders at Canterbury.

From a tracing in the Art Library of the Museum.

semi-opaque, of which, no doubt, the painter from the first took advantage. A thin smear of diluted pigment merely lessened the amount of light shining through, and so qualified the colour of the glass; but paint was never used to give it colour. It served in the first place to give detail, by defining the outline of forms: it marked the features of the face, the folds of drapery, the serration and veining of foliage, and so

forth, none of which lead-glazing could give. But lines and hatchings of brown were from the first (twelfth century) used not only to give form but to qualify colour and regulate the distribution of the rays of coloured light shining through. From the first also a certain amount of thin smear tint was used to soften 'the solid lines of brown and to prevent the spreading of the light, always voracious of intervening lines of dark. Light is not so easily stopped out.

At first, if we may accept the statement of Viollet-le-Duc (whose essay in the famous Dictionary, under the word Vitrail, is a mine of information on the subject) the solid lines were not traced, nor the thin scum of tint laid on, until the heavier shading had first been fixed in the fire; but in the thirteenth century they began already to fire the painting all at one operation instead of two. The result is a slight merging of the lines into the tint, not in itself amiss; but the greater demand for glass, and the hastier way of painting induced by it, seem in the later part of the century to have led to less careful work, indeed to a kind of scamping which we associate rather with the nineteenth or twentieth century than with the thirteenth.

The use of smear shading seems in early days to have been more with the purpose of lowering the light than of rounding the forms, which were firmly drawn in lines of solid paint laid on with a full brush. The exception to the rule of not using pigment as colour, and it is so inevitable that it hardly counts as an exception, is where it is used for black, as in the representation of hair, the details in that case being scratched out of it. It was from the first the practice of the glasspainter to scratch the curls of the hair, or it might be a pattern, out of a solid layer of pigment, with the stick end of his brush.

The colour in an Early window was given by the glass; each separate patch of colour meant always a separate piece

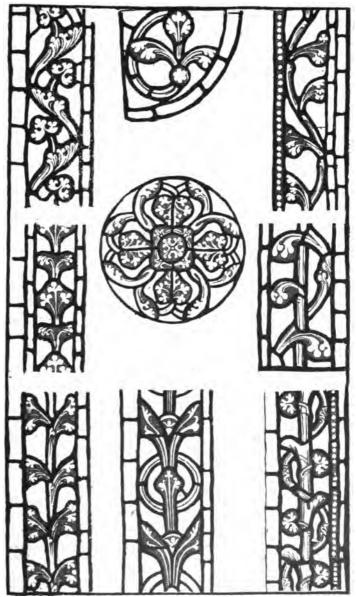
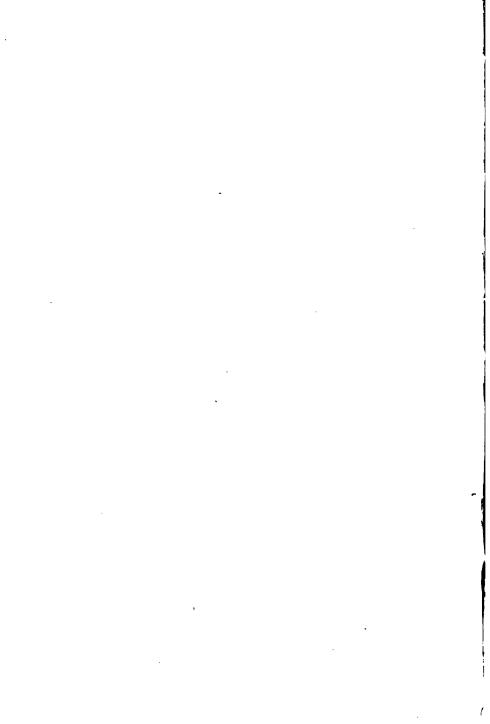


FIG. 10.—EARLY BORDERS, ETC., AT LINCOLN.
From tracings in the Art Library of the Museum.



of glass, laboriously brought to shape, not cut out with a diamond (that was an invention of the seventeenth century). The thirteenth century practice was, by passing the point of a red-hot iron across the surface of the glass, to dispose it to break in that direction, and then to chip it painfully to the precise shape required. This implied simple shapes, and so to some extent influenced design. It was possible by infinite patience to shape, for example, a V-shaped piece, but the risks of its snapping at the elbow were very great, and even when such a piece was safely cut it was likely to snap at the first pressure of the wind upon the finished window, if not in the process of being fixed in its place. The glazier, therefore, was but wise in his generation when he adopted simple shapes for the main lines of his design, identical of course with the lines of lead.

It is curious to compare these lead lines with the lines of grey cement in marble mosaic, with the couched cord marking the joints of inlaid or appliqué embroidery, or with the strips of metal dividing the coloured pastes in cloisonné enamel, in all of which it is an essential of design that the lines of jointing shall form the outlines of the design. Arab windows (of comparatively recent date, but carrying on doubtless an ancient tradition) the pieces of glass are set in plaster instead of lead. But, lead or plaster, the point is that separate pieces of white and coloured glass are cut to shapes not involving extravagant risk of breakage, and are framed together strongly enough to withstand the persistent pressure of the wind. The object of paint in Early Gothic glass was, as before said, to give detail by stopping out the light in lines finer than lead could give; and artists availed themselves liberally of it, using it for the most part solid, because, whilst black gave brilliancy to the coloured glass, a scum or film of pigment dimmed it.

Apart from these considerations, stained glass design did

not materially differ from other design of the time. There were practically four kinds of window design in vogue during the Early Gothic Period.

- 1. Pattern windows, chiefly in comparatively colourless glass, "grisaille" as it was termed; occasionally devoid of paint.
- 2. Figure windows in rich colour; with Saints and other holy personages standing or sitting under some sort of architectural canopy.
- 3. Medallion windows; in which pictures in medallion form were set in a framework of ornament, all in rich colour.
- 4. Jesse windows; in which the genealogy of the Saviour is set forth in heraldic, and at the same time most decorative, fashion.

Except for "grisaille" windows (designed to admit plenty of light) deep colour is the keynote of Early glass. The earliest glass was deep, rich, even sombre in its magnificence. Towards the end of the thirteenth century it grew lighter. In fact, the tendency of taste was thenceforward towards brighter and lighter colour. The intensity of tone characteristic of the thirteenth century diminishes as the years go on. In later Gothic glass jewels of deep colour are set in silvery white; but the general effect is no longer jewel-like, rather it might be described as silvery. Fourteenth century glass hovers between the two extremes.

Early grisaille runs almost of necessity to somewhat geometric lines, and in particular into a form of strapwork more typical of Romanesque than of GRISAILLE. Gothic ornament. You have only to look at the interlacing or banded forms of

Early grisaille to realize that they are essentially lines which lent themselves to and could be readily expressed by glazing. That accounts for the lingering of these earlier elements in a century when they were already somewhat out of fashion. Foliated detail, which is also a common feature in grisaille, is usually supplementary to such strapwork, though the straps themselves occasionally burst out into foliation, the character of which differs from carved ornament of the twelfth or the thirteenth century only in so far as tracing with a long-haired brush differs from carving with a chisel.

The detail is boldly outlined in brown, perhaps with a few veins or fibres lightly traced, and the background is covered with a cross-hatching of fine lines, which give the appearance



FIG. 11.—GRISAILLE IN THE NORTH TRANSEPT OF LINCOLN CATHEDRAL.

From a tracing in the Art Library of the Museum.

of pure white ornament upon a tinted ground, whereas a tint of thin colour all over the ground would have produced a comparatively muddy effect. Patterns of rather later date (not so common in English work as in French), without this cross-hatched ground, are comparatively ineffective.

Another device of the glass-painter was, to paint broad lines or bands of solid brown, and with the stick end of the brush pick out a zigzag or some pattern in light upon it. That is seen in Fig. 3.

The interlacing of the bands or straps above referred to is

quite a feature in French grisaille. In English it was the custom to plant, as it were, one series of shapes in front of another series disappearing in part behind it.

Into some of the earliest known ornamental windows (at St. Denis, near Paris, and at St. Remi, Reims) there enters so much coloured glass that one can hardly describe them as grisaille: but this half-and-half arrangement, happily unusual in early thirteenth century work, is by no means pleasing in effect. Many windows, however, which have a pronounced appearance of grisaille (the Five Sisters, at York, for example) really contain a great quantity of coloured glass, and good strong colour too. Windows with very little colour in them, perhaps a little pot-metal yellow only (it was a favourite device of the French to minimise the use of colour in grisaille), or pure white windows, are usually very beautiful. Viollet-le-Duc speaks of plain glazing without paint done in the twelfth century, and dates painted grisaille from the thirteenth. That is a question rather hopeless of definite solution; but we know that the Cistercians very early favoured white pattern windows.

The triforium or the clerestory of a Gothic cathedral is often quite a picture gallery of apostles, FIGURE prophets, kings, bishops and others, set forth WINDOWS. on a scale much above life size. If the windows are long the effigies are most likely ranged in double rows, one above the other; if they are broad (which is usually the case in Norman windows) a wide border brings the space to more convenient proportions. The figures stand for the most part fronting you, upon little mounds of green which represent the earth, or upon straight labels inscribed with their names, their feet pointing downwards in a quite impossible way. They are framed in little niches of architectural design, but the architecture does not assert itself. merely that the architectural framework is of insignificant proportions, but that the scheme of the design is to blend everything, figures, canopies, and border, into one blaze of brilliant colour, from which you have more or less to pick out the design: though absolute confusion is avoided by carefully silhouetting the figures against a ground of deep blue or red. In some cases the background is white; but departure from the



Fig. 12.—Early Figure in a Window at the East End of the Choir of Lincoln Cathedral.

From a tracing in the Art Library of the Museum.

orthodox ruby or sapphire ground is rare. The redeeming feature in the Early canopy is that it does not call attention to its ugliness. Individually, it is not a thing of beauty.

Figures seated on a sort of throne are less common than standing figures. The length of tall Early English lancets

almost naturally suggests the standing position; just as the broad lights of Norman-French architecture seem almost to necessitate the broader border which prevails in France.

The rude and archaic drawing of such figures is of the period, and by no means peculiar to glass; but there is a sort of exaggeration in the lines of the faces, and an attenuation in the fingers of the hand, which, though grotesque when you examine the work closely, is in reality very cleverly adapted to express what the painter meant to convey, and especially to counteract the spreading of the light, which would have made



FIG. 13.-EARLY DECORATED GLASS FROM ST. URBAIN AT TROYES.

less emphatic drawing vague and indistinct, seen from the floor of the church.

The bogey-like effect of some of the ruder figures is enhanced by the introduction of white glass for the eyes (Fig. 13), which glare at you out of the dark brownish pink faces in a way the artist, it may be presumed, did not foresee. It is a peculiarity of Early glass that the flesh is in this reddish brown, which was the nearest they could get to flesh colour. To this day no satisfactory flesh tint has been produced in pot-metal glass. The figures are at first all of a type, very rigidly

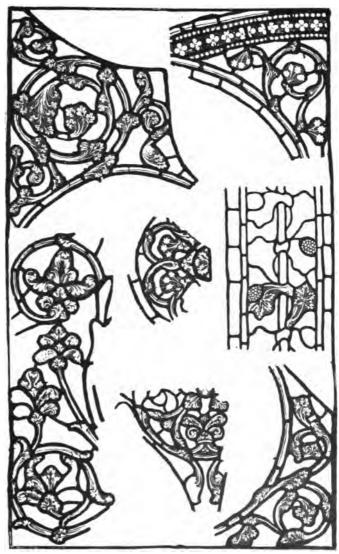


FIG. 14.—EARLY DETAILS OF MEDALLION WINDOWS AT CANTERBURY CATHEDRAL.

From tracings in the Art Library of the Museum

. ť. • • . , drawn, the drapery clinging, after the Byzantine fashion, in close folds to the limbs, plainly distinguishable through it. In the thirteenth century the action of the figure becomes more spontaneous, and the drapery is looser, following and expressing it.

The typical Early window is the so-called Medallion window. It has a broad border of ornament, in wide windows often very broad (a full sixth or more of MEDALLION the width of the light), and, within that, WINDOWS. a series of medallions (circles it may be, quatrefoils, or other regular shapes) one above the other, occupied by figure subjects on a small scale. The figures are simply displayed on a single plane against the blue or ruby ground, and the shape of the medallion is defined by a broad band of contrasting colour (red against blue or blue against red), itself bounded by narrow lines of white. The interstices between the medallions are filled in with ornament, consisting, in England of scrollwork (Fig. 14), in France usually of geometric diaper. Prior to the device of the Medallion window it was the practice simply to divide the window space (between the borders) into rectangular divisions -- the iron cross bars, necessary to support the glass in its place, naturally did that—and to treat each of these square or oblong spaces as a picture panel framed by lines of white and colour.

A window is fixed in its place, it should here be explained, by means of copper wires soldered to the leadwork, and tightly twisted round the iron saddle-bars which cross the window horizontally at short intervals and are cemented into the masonry. A very broad window may need also vertical stanchions. These, in the case of a window with a broad border, naturally follow and define the border line. In Medallion windows it was found convenient, less hurtful, that is to say, to the design, to shape the necessary

bars to the outline of the medallions. That was clearly the way to make them help the effect instead of marring it, to emphasize the design instead of contradicting it. That this practice of shaping the bars resulted from a form of design which encouraged if it did not necessitate it, seems obvious. In certain Early windows, not precisely of the medallion type, at Poitiers, the bars follow and enforce other emphatic forms than the medallions, such as the cross in the case of a crucifixion subject. In all other windows the bars are carried straight across the window. No doubt, however, the thirteenth century designer soon learnt to rely upon the bars to define his medallions, and shaped the divisions of his window with a view to the scaffolding which the bars enclosing and connecting them would give.

Very big medallion shapes were commonly cut up by other bars into four or five divisions, each of which enclosed its separate subject.

The "storied windows" in the mind of the poet must certainly have been Medallion windows, which were designed, as a rule, to set forth in picture the history of the Saviour, or of some saint, with all the legends which had grown round his life. It was precisely their intention to tell a story, and of course, in so doing, to convey a moral. It was possible even by a sequence of subjects to enforce a dogma of the Church.

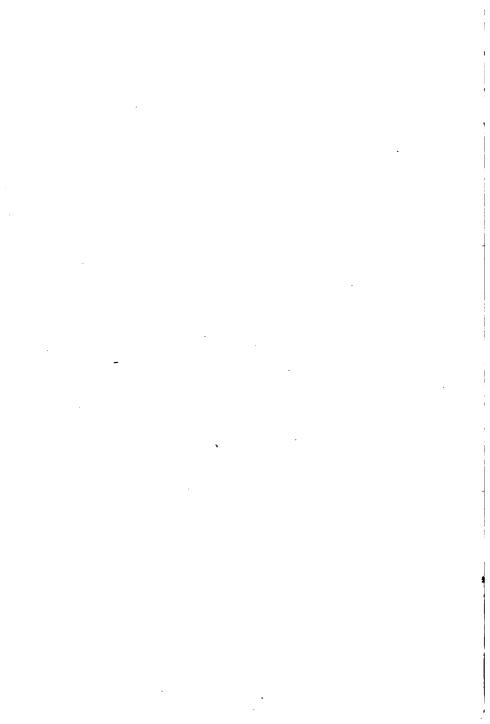
A less typical and far less satisfactory form of Medallion window lingered on into the fourteenth century. In Germany and in Italy it took eventually quite a new shape, characteristically German, in which one huge medallion (usually a cusped circle) stretched right across the window through its several lights. In Early French and English glass the medallion keeps not only within a single light, but well within its border.

The big Rose or Wheel windows, more characteristic of French than English cathedrals, often contain figure subjects,



Fig. 15.—Portion of a Thirteenth Century Jesse Window from the Sainte Chapelle at Paris.

In the Museum. Given by Henry Vaughan, Esq. (No. 6-1881).



and are, in fact, adaptations of the medallion window to the shape of radiating tracery, with only a narrow border to the narrower lights. Sometimes they consist entirely of ornament, in which case they are almost the only instances of deep rich windows devoid of figure work. The big round windows of



Fig. 16.—Portion of the Tree of Jesse in the East Window of Canterbury Cathedral.

From a tracing in the Art Library of the Museum.

Italy are of later date, and are more nearly akin to the German Medallion windows above mentioned.

In an Early Jesse window (Fig. 15), the Tree of Jesse, though it stands for the vine, is of the conventional kind peculiar not merely to twelfth or thirteenth century glass, but

to the ornament of the period generally, carved, illuminated, or embroidered, inclining, according to its date, to the elaborate

Byzantine or to the simpler Gothic type IESSE with trefoiled and cinque-foiled foliation. WINDOWS. It springs, of course, from the loins of Jesse, couched at the foot of the window, its straight upright main stem almost entirely hidden by a genealogical series of kingly figures, culminating towards the head of the window in the figures of the Virgin and of our Lord in Majesty, surrounded by the gifts of the Spirit, typified by seven doves. branches of the tree form, in many cases, vesica-shaped medallions (Fig. 16), containing each its holy personage, and affording opportunity for a change of colour in the background. Either amidst the scrollery at the sides of the window or in the border are often attendant angels or prophets, similar to those in the narrow lights from the Sainte Chapelle (Figs. 6 and 17).

It is only by exception that thirteenth century glass ever hesitates between colour and grisaille, as at the cathedral at Auxerre, where rich figure windows are framed in borders of grisaille, or at Amiens and Poitiers, where figures in rich colour are, as it were, planted upon a ground of grisaille.

Thirteenth century German glass is naturally Romanesque in character, following the architecture of the country, where Gothic was of later growth than in France or England.

The palette of the Early glass-painter was more restricted than one would be disposed to think, seeing the variety of colour effect obtained by means of it. But it was strong in deep, rich tones; red, of the quality of ruby; blue, like sapphire; green, as pure as emerald, deep and velvety as moss, or of sober olive tint; purplish-brown, or brownish purple, which in its lighter shades gave the not very pleasant flesh-colour above mentioned; strong yellow, deep but not brassy; turquoise or slightly greenish blue, which, however, is of

rather rare occurrence; greenish, yellowish, and dusky white;—and that is all, or all upon which the glazier could rely. There is no saying what colour might not by chance come out of the melting pot, so freakish is the fire, so far from pure were the oxides used by the glass-maker, and so little scientific the processes of his manufacture. And then, no sheet of glass





FIG. 17.—PARTS OF SIDE-LIGHTS OF A JESSE WINDOW FROM THE SAINTE CHAPELLE AT PARIS.

In the Museum. Given by Henry Vaughan, Esq. (No. 5-1881).

was of even thickness, or flat in colour, or free from specks and bubbles. It might be strangely streaked and varied; a disc of ruby in particular might be shaded from red to white or to greenish smoke colour, according as the copper in it happened to be converted into coloured stain or not. White glass, so-called, was far from colourless, but very decidedly tinged with green or yellow, owing to the iron in the sand of which the glass was made; and it was happily not transparent, but of a horny translucency.

The action of the weather has, in the course of centuries, corroded the once plain surface of old glass to such a degree as infinitely to refract the light shining through it; lichen has attached itself (especially on the southern side of the church) to the outer surface; heavy curtains of cobweb overhang the face of windows beyond the reach of brooms; and altogether the effect of colour is mellowed by age. But time has only deepened the effect at which the Early mediæval glazier aimed, an effect of jewelled light, produced by a mosaic of quite small pieces of glass, coloured in the pot, and only so far obscured by paint as was necessary to keep out the light, to give coherence and definition to the ornamental details of the window, to represent the person, or to tell the story, it was designed to picture.

The simplicity and naïvety of the telling belonged to the period, the choice of subject to the Church. The meaning of the picture is not always easy to make out, at the distance at which the windows are placed from the ground; but the interest of deciphering it is a thing apart from the study of glass-painting in its decorative and technical aspect, with which only this hand-book has to do.

The earlier the glass the more implicitly it relies for its effect upon the mosaic of coloured pot-metal, and the more absolutely subsidiary is the use of paint. The work of the twelfth and thirteenth centuries is naïve in design and crude in execution; but, alike for depth of colour, for conformity with the architecture to which it belongs, and for the impression of solemnity it gives, it was not surpassed by the centuries to come.

To compare it with later work is, however, futile. There

is little in common between this rather archaic craftsmanship and the more accomplished workmanship of the sixteenth century, except that both are executed in glass. We admire one or the other, according as we are more in sympathy with the glazier or with the painter, with decoration or with picture.

Whatever progress was later made in glass-painting, the

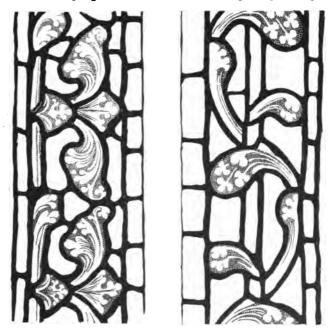


Fig. 18.—Early Mosaic Borders at Lincoln Cathedral, with Subsidiary Painting.

From tracings in the Art Library of the Museum.

twelfth century glaziers have never been excelled, if equalled indeed, in their appreciation of glass, and of the way to treat it. They took into full account, for example, the radiation of the light as it fell through blue, red, or yellow glass, allowing amply in their design for the much fuller radiation from blue

and the comparatively slight radiation from yellow; and, where necessary, they put a stop to it by means of paint. In particular, they qualified the effect of white glass, through which naturally the light spreads most, by relatively heavy painting. A line of white had, for example, commonly a pearl or bead pattern painted upon it, so that about half the light was excluded by solid paint.

These men knew their trade, and knew it thoroughly. Indeed, glass-painting was, clearly, from the time we know it first, the work of cunning craftsmen, artists no doubt, but craftsmen too. The splendid windows of the twelfth and thirteenth centuries are in fact the work of unknown glaziers and glass-painters, who raised their craft to the height of art.

Possibly the earliest glass we know of is at Le Mans, parts of an Ascension and other windows, which date perhaps even a little earlier than the twelfth

12TH CENTURY. century. At Chartres there are three windows at the West end of the Cathedral, and parts of another known as "La belle

Cathedral, and parts of another known as "La belle Verrière," which belongs to about the middle of the century.

Even more often quoted is the glass at St. Denis near Paris, parts of a Jesse tree, of a window illustrating the Life of Moses, and some ornamental griffins in grisaille now worked up into windows which are hardly to be called old.

At Angers there are some windows in the nave, and at Bourges, Châlons, Vendôme, and St. Quentin some remains; as also at York, where are to be found a small portion of a Jesse window and various pieces of border work, about the only English work extant—if it is English: more likely it is French.

Certain windows at St. Remi, Reims, and at Poitiers, date perhaps a few years after the turn of the century, but preserve all the Byzantine tradition.

Some of the figures of Emperors on the North side of the

nave at Strasburg are of the twelfth century, but very different in style from French work generally; they are, if possible, more emphatically glazier's work.

A fragment in the Victoria and Albert Museum (Fig. 3) may possibly be earlier than the thirteenth century.

The treasure house of thirteenth century glass is Chartres.

Bourges also and Le Mans have each a wealth of beautiful work; Châlons-sur-Marne, Auxerre, and many others of the great French churches, are rich in Early glass.

In England, we have the greatest wealth of medallion windows at Canterbury, and of grisaille at Salisbury. At Lincoln there is good work, and at some smaller churches, such as Westwell Church. The beautiful grisaille windows at York Minster, known as the Five Sisters, betray symptoms of an inclination to go over to the new manner. So, too, the glass at the Sainte Chapelle, Paris, of which there are some fragments in the Museum (Figs. 6, 15, and 17), though belonging to about the middle of the century, begins already to show signs of a coming change of style.

## IV.

## MIDDLE GOTHIC.

The changes which, towards the fourteenth century, crept into the design and treatment of stained glass, were determined by a variety of circumstances: the different shape of



FIG. 19.—DECORATED TRACERY LIGHT AT WELLS CATHEDRAL, SHOWING MORE NATURAL TREATMENT OF FOLIAGE.

From a tracing in the Art Library of the Museum.

the windows, the growing desire for more light, the tendency more and more pronounced towards pictorial treatment, the increased resources of the glazier, and especially of the glass-painter. A window of the Middle Gothic (or Decorated) period is to be distinguished, therefore, from earlier glass; by the design being schemed to spread over several lights; by the lighter, brighter, gayer key of colour; by the natural forms of the ornamental foliage, now deliberately

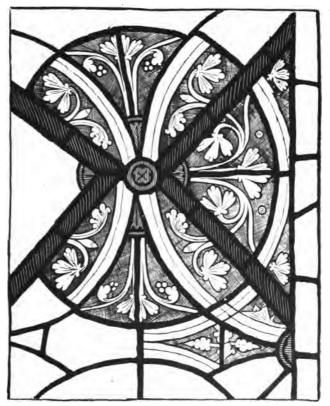


FIG. 20.—EARLY DECORATED GRISAILLE AT STANTON St. JOHN, OXON.

From a tracing in the Art Library of the Museum.

taken from growing plants (Figs. 19 and 20); by the more serious attempt at realism in the drawing and painting of the figure; and by the adoption, finally, of a practice, unknown to glaziers of earlier times, of *staining* white glass yellow.

The net result of the endeavour at the same time to connect in one group a series of long, narrow lights, and to get more light into the window, is that windows are less

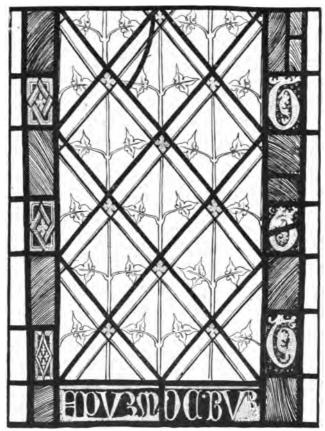


FIG. 21.—PART OF A DECORATED QUARRY WINDOW.

In the Museum, the bequest of Henry Vaughan, Esq. (No. 939—1900).

often to be described as in grisaille or rich in colour, both white and colour entering more generally and more equally into all windows. White windows were enriched with

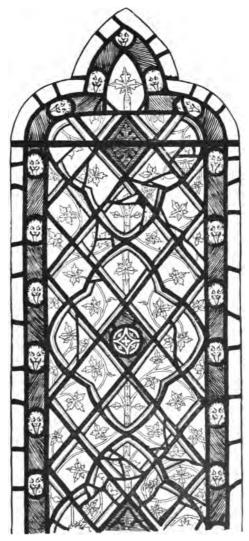


FIG. 22.—DECORATED GRISAILLE.

From a window in the Museum, the bequest of Henry Vaughan, Esq. (No. 932-1900).

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coloured borders and bosses; and bands of coloured subjects were carried across them, holding the separate lights, as it were, together.

In windows of the simpler kind, the white glass was in

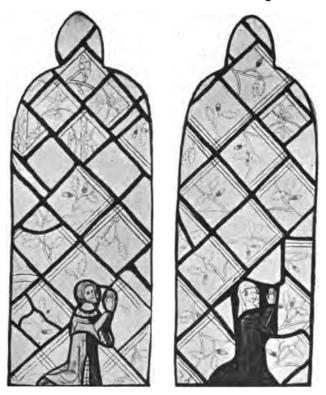


Fig. 23.—Quarry Lights with Portraits of Donors in Water Perry Church, Oxon.

From a tracing in the Art Library of the Museum.

the fourteenth century often cut into diamond-shaped "quarries," as they are called, on which was painted a pattern of trailing foliage, distinguishable as ivy, maple, oak, vine, and so forth, at first with, afterwards without, the

background of cross-hatching characteristic of Early work

The painting upon the glass being by this time more delicate, the rigid lines of lead asserted themselves more strongly than before. They formed, in fact, the pattern which first struck the eye.

For the rest, Decorated grisaille patterns did not so greatly differ from the Early, except that details of foliation were natural, and that the leading was not so thorough; bands of white upon white, for example, would have a leadline often on one side of them only (Fig. 24); by degrees, painted lines did duty for leads where it was possible.

In the case of figures or figure subjects in relatively strong colour, forming bands across a relatively white window, narrow borders of colour round the separate lights connected the horizontal bands, and further lines or bosses of colour amidst the grisaille prevented any appearance of patchiness. The broad band of figure work pronounced itself just enough to bind the window together, not enough to destroy the individuality of the separate lights.

Figures and figure subjects were still enshrined under canopies, high-gabled and large-crocketed after the Decorated manner, shown always in flat elevation, and readily distinguishable by their shape, proportion, and brassy colour from the earlier variety. It was the kind of canopy to be found also on coins, ivories, and brasses, and in other monumental effigies of the time.

Even in windows rich throughout (though never now so deep in tone as Early glass), the characteristic horizontality of design above mentioned was maintained by means of the canopy work, which sufficiently separated one series of figures or subjects from another, and formed itself conspicuous bands of rather lighter and much yellower colour between the tiers of figure work. The brassiness of these canopies is

characteristic, and so is their disproportion to the figures beneath them, which they sometimes overpower entirely. The Germans were the most flagrant sinners in this respect, but they sinned in company with the rest of Europe. The rule was excess. The background to a fourteenth century canopy was usually of a colour contrasting with that of the



FIG. 24.—DECORATED GRISAILLE IN NORBURY CHURCH, DERBYSHIRE.

From a tracing in the Art Library of the Museum.

figure work; if one was red the other would most likely be blue; and in the case of a series of figures upon a red ground under canopies upon blue, or *vice versû*, this would again assist the banded effect of colour before mentioned.

In German work the pinnacles of tall canopies appear sometimes against a coloured diaper, such as we associate with thirteenth century medallion windows. There, too, we find the above-mentioned form of medallion which crosses three or more lights of a window, and affords space for a subject drawn on a proportionately large scale. Peculiar to Germany also are pattern windows, all in tolerably rich colour, with, instead of figure or canopy work, a growth of rose, ivy, maple, or vine scroll.

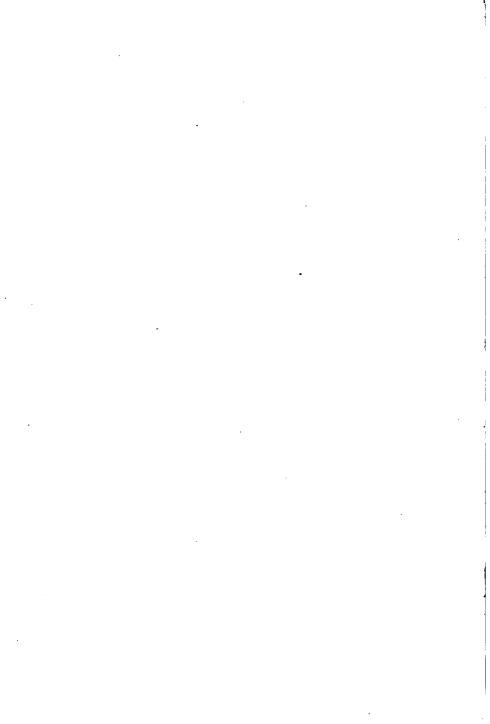
A form of window to be found in all countries is where the broad horizontal bars, together with the mullions, are accepted as forming compartments, within each of which is a small subject, with a very insignificant canopy, if any. This is never a very readable form of design, the less so as the practice arose of carrying here and there one picture, if so it suited the artist, beyond the mullion into the next light. It is not as if each of them occupied two lights; the arrangement being only casual, you cannot always be quite certain whether it is a complete subject you are trying to decipher or only part of one.

On a larger scale the spreading of one picture over the window has not this objection. There is not much difficulty in realizing that a kneeling figure of the Virgin in one light, facing an angel with a scroll inscribed "Ave Maria" in the other, together represent the Annunciation, or that the figures of Christ upon the cross with arms outstretching into the sidelights, and of the Virgin and Saint John in these, together form one subject. In the beginning, at least, pictures of this kind were designed in such a way as plainly to acknowledge the divisions of the stonework. In the Jesse window at Wells, to which the figure on page 47 belongs, the vine branches through the lights, each with its canopy, across the shafts of which the branches are carried. Such straying of the design over a window of several lights is indication of a growing tendency, which led in the end to disastrous results. But it would be absurd to say that the



Fig. 25.—Part of a Decorated Jesse Tree in the East Window at Wells.

From a tracing in the Art Library of the Museum.

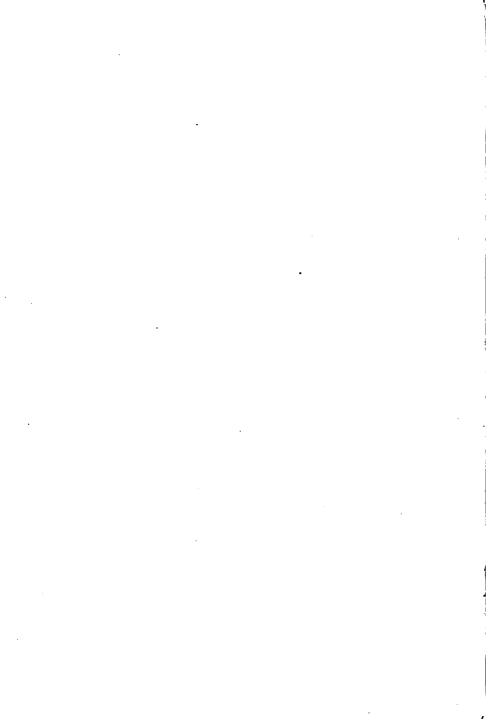


separate lights of a window should arrays be resigned so that each was numbere in used in part of the design ever extending beyond a single look they form after all a window of several lights and not several separate windows. Everything depends of nourse, upon the adminished me porture in mullions. So long as the designer simensed his porture in such a way that the mullions had not hart in the simulation was, artistically speaking, safe. The tiese eventually fatal to glass design of ignoring intervening sinnewick, had not yet occurred to the fourteenth nemary mind.

The increased area of me windows of this period offered a means of representing figure subjects as apart from rows of standing figures, which it in the end become monotonous on a scale large enough to be effective and intelligible at a distance from the eye. Clever designers did running things in the way of scheming their figures and devising architectural landscape or ornamental accessories which, while they held the lights of the window together, yet confessed the limits of each separate opening. It is to be noted that mullions do not actually interfere with the picture in glass to anything like the degree which a design on paper would give one to expect.

It is usual in Decorated work for the shafts of canopies, and perhaps also an outer border, to be carried down on each side of the light, broken only by quite indispensable portions of the figure, such as, for example, the extended arms of the Christ upon the cross, which are allowed to cut boldly across in front of them. The outline of each light is, as a rule, defined by a marginal line of white, which, as it were, clears the glass from the stone.

Jesse windows of the Middle Gothic period are, as the expected, much freer and less formal in design that the fashion before. The genealogical tree is no longer mistaken for anything but a vine, though the leaves and



separate lights of a window should always be designed so that each was complete in itself, no part of the design ever extending beyond a single light: they form, after all, a window of several lights, and not several separate windows. Everything depends, of course, upon due acknowledgment of the mullions. So long as the designer schemed his picture in such a way that the mullions did not hurt it, the situation was, artistically speaking, safe. The idea (eventually fatal to glass design) of ignoring intervening stonework, had not yet occurred to the fourteenth century mind.

The increased area of the windows of this period offered a means of representing figure subjects (as apart from rows of standing figures, which do in the end become monotonous) on a scale large enough to be effective and intelligible at a distance from the eye. Clever designers did cunning things in the way of scheming their figures and devising architectural landscape or ornamental accessories which, while they held the lights of the window together, yet confessed the limits of each separate opening. It is to be noted that mullions do not actually interfere with the picture in glass to anything like the degree which a design on paper would give one to expect.

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Jesse windows of the Middle Gothic period are, as would be expected, much freer and less formal in design than was the fashion before. The genealogical tree is no longer to be mistaken for anything but a vine, though the leaves and grapes may be out of all proportion to the comparatively small figures among its branches. Sometimes the figures are framed in medallions of elongated shape, formed most likely by the stem of the tree. The medallion, by the way, when it lingered on into the fourteenth century is often longer than it is broad. Small figure subjects in colour are sometimes introduced into grisaille in much this way, but never with very happy effect.

Conspicuous in fourteenth century glass are the tracery lights, covering sometimes as much as half the area of a large window. It is clear that the filling of these small and variously shaped openings necessitated some departure from the lines of design appropriate to the lights below. Borders, for example, are of necessity narrower, and it is only in the larger and more important divisions that figure subjects (Fig. 27) can well be introduced. The smaller contain sometimes little figures of angels, or demi-figures, or medallion heads of saints. The heads of bishops in the tracery lights at Wells (Fig. 28) are unduly large for the space they have to fill; but this particular kind of disproportion is exceptional. Very commonly, on the other hand, the figure work is overpowered by the ornament, and especially by the architecture surrounding it. effective device than figure work is the introduction of heraldic shields, which also form sometimes the central features in important tracery lights. The display of heraldry is by this time more the fashion than it was. Less important openings are commonly in grisaille, with here and there a boss of jewellery and narrow borders consisting perhaps only of a line of colour. In fact, the usual scheme of design is: grisaille with narrow coloured borders, dwindling in the smaller lights to a mere fillet of colour; and colour patches in the form of figure work or heraldry, dwindling in the smaller lights to mere rosettes.

Even whilst figure drawing is still rude (it improves perceptibly towards the end of the century), there is a very

obvious attempt at grace of pose, which has rather the look of affectation.

Strongly traced line work is still a feature in fourteenth century glass-painting; but there was a change in the method of laying on a tint or shade of brown. The early shading resulted in an unsatisfactory smear. It was, in fact, not within

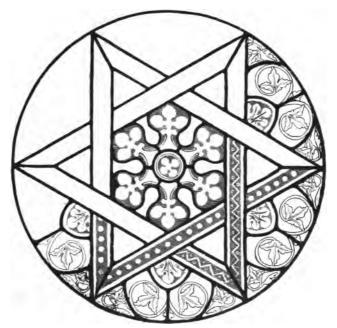


FIG. 26.—DECORATED TRACERY.

From a tracing in the Art Library of the Museum.

the brush power of the painter to lay upon the slippery surface of glass a half tint that was anything like even. He found at last, however, that he could bring it to a much pleasanter texture by dabbing the wet paint with the bristle ends of a brush. This he began towards the middle of the fourteenth century to do, at the same time softening the edges of the shadows. And there was yet another advantage in this stippling process. A smear of tint, spread as equally as could be over the surface of the glass, dulled it very considerably. Stippled paint, on the contrary, gathered itself together into little hillocks of pigment, with little dells between, where the glass was almost clear, and proportionately translucent. A further development of this practice occurred towards the end of the century; but meanwhile the granular texture given to painted shadows by stippling denotes the middle of the middle period.

A yet more eventful step in technique was the colouring white glass yellow, not in the pot, nor yet by enamel colour,

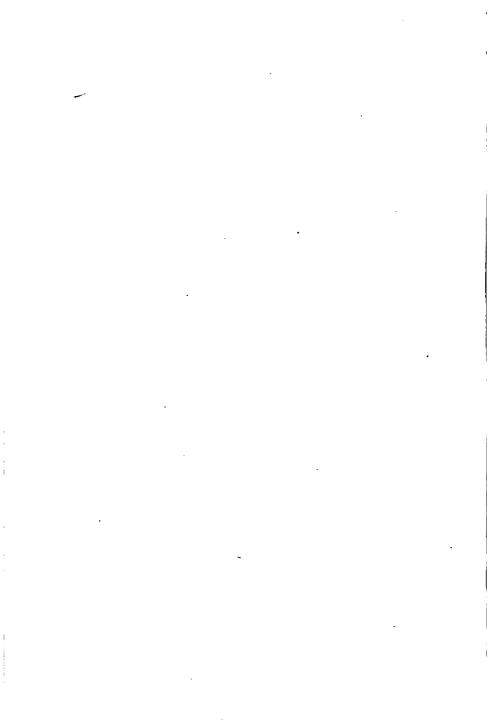
But by means of a stain developed in the kiln. This yellow stain remains to the present day the only means we have of staining glass after it has come out of the pot.

It was discovered about the beginning of the fourteenth century that a solution of silver, painted on to the glass, would, under the influence of the fire, stain white glass yellow; pale or dark, greenish or orange, according to its strength and to the heat of the fire. Silver stain was thus a means of showing white and yellow on the same piece of glass without lead. was absolutely permanent, removable only with the surface of the glass itself, into which it penetrated. There was never any great certainty as to the precise strength of the yellow which the stain would give, but it was always pure and bright, never harsh and flat in colour, more often accidentally graduated from light to dark, from cool to warm; so different is it in quality from potmetal yellow, that one can usually at a glance distinguish the one from the other; and a pleasing contrast is afforded by the juxtaposition of the two. It is not surprising, then, that a much greater use of yellow is characteristic of Decorated glass, more especially upon white; the glass-painter was, in fact, accustomed to use yellow stain upon white glass, much as a gilder would use gold leaf upon wood or stone, to give brilliancy to the points of interest, and



Fig. 27.—Decorated Tracery Light in Wells Cathedral.

From a tracing in the Art Library of the Museum.



to heighten the effect generally. This, of course, made his windows bright and gay.

A much less noticeable and important feature in fourteenth century colour, but still a notable departure from conservative tradition, was the more liberal use than heretofore of green glass. The Germans had a particular leaning to deep, rich, mossy green; a more sober shade was used in England, as may be seen at Wells, Ely, and elsewhere, even for the backgrounds to figure subjects and canopies, where blue and ruby had once been almost a foregone conclusion. As time went on, paler and flatter tints of colour were sought in glass. Amongst other shades, the brownish pink, or flesh colour, pales perceptibly with the century. Eventually it gives way to white flesh, upon which the hair was commonly stained yellow.

Transitional is a term we have no right to use as though it applied only to certain periods of art. Art is always moving on; but this middle period of glass-painting is more plainly in a state of transition than earlier or later work. From the earlier tradition of barbarically beautiful mosaic eked out with painting, to the later more accomplished painting upon a basis of glass mosaic, is a very decided step; and it is this step which we distinguished as the Middle Gothic Period—a period of transition, which has neither the colour of the earlier, nor the draughtsmanship of the later glass to recommend it. A man prefers thirteenth or sixteenth century glass according to his natural bias: no one would ever prefer to either the work of the fourteenth century.

Excellent examples of the progress from Early to Decorated glass are to be found at St. Urbain, Troyes, belonging by date to the end of the thirteenth century. Richest of French churches is perhaps the Cathedral of Evreux. The church of St. Pierre at Chartres is full of fourteenth century glass. The church of St. Ouen at Rouen is also to be mentioned;

in Germany, St. Sebald's at Nuremberg and Freiburg; in Italy, Santa Maria Novella and Santa Croce, at Florence, and the upper church at Assisi.

In England some of the earliest transition work is in Merton College, Oxford, thirteenth century work still, they say, but plainly going over to the new style. The fine array



FIG. 28.—DECORATED TRACERY LIGHT IN WELLS CATHEDRAL.

From a tracing in the Art Library of the Museum.

of windows in the Chapter House at York dates probably from soon after the beginning of the new century. In the nave of York Minster also are fine Decorated windows later in date and fuller in colour, the West window amongst others, and the bell founders' window. Famous Decorated glass exists also at Wells, and numerous examples at Tewkesbury, Bristol, and elsewhere. The great East window at Gloucester Cathedral, belonging though it does to the early part of the second half of the fourteenth century, is not typically Decorated, on the contrary it is a strange



Fig. 29.—Fourteenth Century Grisalle, with Pattern in White and Stain.

In the Museum, the bequest of Henry Vaughan, Esq. (No. 940-1900).

forecast of the later manner, more particularly in regard to colour. The first impression of it is very much that of Perpendicular glass; it is only when you begin to look into its design that you find the details to be earlier.

## LATE GOTHIC.

The term Perpendicular applies no less to English glass than to the architecture of the Late Gothic Period. The canopy work, upon which the artist now more than ever relied for his ornament, takes straight upright lines, as marked almost as the tracery mullions which give the name to the English style. It does not apply equally to foreign work; and, indeed, in this style the similarity of English to continental work is much less than in preceding centuries. We seem to have developed a style more distinctly our own, as the Germans did in their fourteenth century work.

The development of glass painting in the fifteenth century, and in the last quarter of the fourteenth, was further in the direction of picture and of light. It was the glass-painter who now took the predominant part, no longer the glazier, though the mosaic character of a window was still not left out of sight; the painter continued to rely upon pot-metal for his colour, and contrived to glaze it together with something like the old cunning.

One imagines a thirteenth century artist thinking out his design as glazing first, planning it, in fact, as so many shaped pieces of glass, to be fitted together like a puzzle; and leaving the consideration of supplementary painted detail to the last. As a matter of fact, you can read an Early design from the outside of the church by help of the leads alone. When the leads do not in any way explain the composition of the design, or when, in looking at the

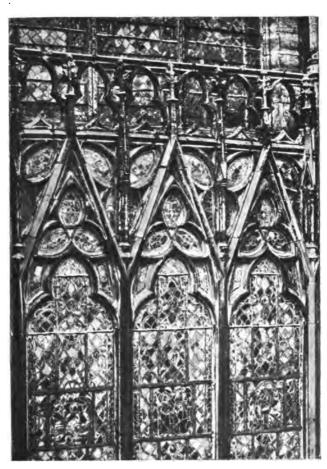


Fig. 30.—Exterior View of Part of a Window at Troyes, Showing the Planning of the Design.

i Y -1 glass from the inside of the church, they no longer seem to have been inevitable, but appear as if they might perhaps have been an afterthought, it may be taken for granted that the work is not of earlier date than the third Gothic period.

For in the fifteenth century the glass-painter reached a stage when he must first have sketched in his picture and then bethought him precisely how he should glaze it. No doubt he would be influenced from the beginning by the consideration of glazing, more or less; otherwise he would not so commonly have arrived at a satisfactory solution of the difficulty; but that was now never his first thought. He was no longer a glazier, thinking how he could carry his design further by the aid of paint, but a painter, thinking how by the aid of glazing he could get colour into his design. His window consisting by this time largely of white glass, the problem of design resolved itself into a question of introducing colour in the midst of white, and (now for the first time) avoiding, as much as possible, the use of leads, which he began to think a blemish upon it.

This brings us to a very important point in the design of stained glass. So long as it was the practice to outline every form with lead, leadwork was no hindrance to the artist; one strong black outline kept the others in countenance; but so soon as it became a question of throwing the leads into here and there an outline only, they were found to be in the way, more and more so in proportion to the delicacy of the painting and the desire of the painter to avoid the necessity of lead lines. The more white glass was used, the more pictorial the aim of the painter, and the more delicate his work (and those were the directions in which fifteenth century glass progressed)—the more difficult it became to deal with leads. Still, though the painter came, as he did during this period, to take precedence of the glazier, the two, as long as they worked together, produced work which quite justifies, by qualities of

its own, the departure of the artist from traditions of an earlier state of craftsmanship.

The typical form of a Late Gothic or Perpendicular design was a canopy window; and the canopy (Fig. 31) was still architectural, more deliberately after the model of tabernacle-work in stone, indeed, than the flat-fronted niches of the preceding style. But, in effect, the canopy was turned to very different, as well as to more important, use. In the first place, the Late form of canopy was almost entirely in white, whereas the Decorated canopy, even when it had in it a fair amount of white glass, produced the effect of colour, not quite so rich, may be, as that of the figures beneath it, but distinctly colour. In the second place, the white canopies were deliberately planned to enclose and frame the richer figure work. The accepted scheme of composition was, in fact, to present a screen of silvery white tabernacle-work, in which were set great patches of figure work relatively rich in colour. At times the key of colour was anything but deep; the figures may have been draped for the most part, if not entirely, in white also; but, even when the colour was confined to the backgrounds, it was enough to distinguish the figure work from its setting. The canopies of an earlier date may be regarded as part of the picture, these were distinctly the frame to it.

Late Gothic canopies were confined as a rule (though not invariably) each to a single light. The shrine was, as it were, built up in the window opening. Its shafts separated the coloured figure work from the mullions. Its pinnacles stood clear against the blue or ruby, forming now again almost invariably the background in the window-head, but no longer separated from the stone work by so much as a fillet of white. Its base was often almost a solid block of white, giving, in a series of lights, the banded effect seen already in the windows of the century before; but the bands were now alternately of white and colour, which produced a very different and quite



Fig. 31.—Perpendicular Lights from Winchester College Chapel.

In the Museum (No. 4237—1855).

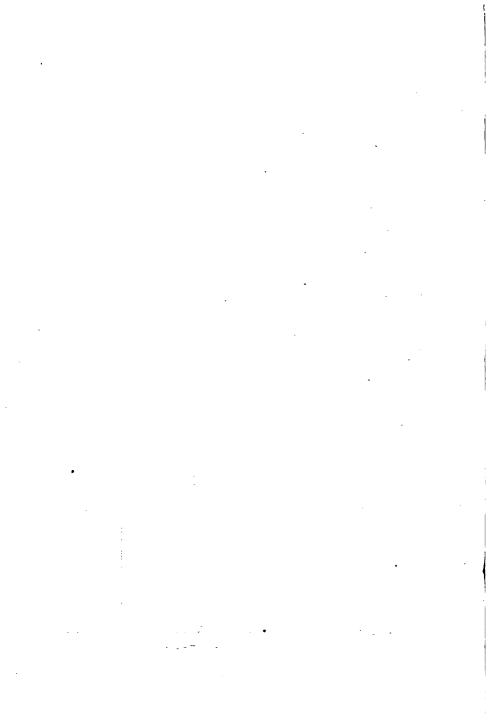
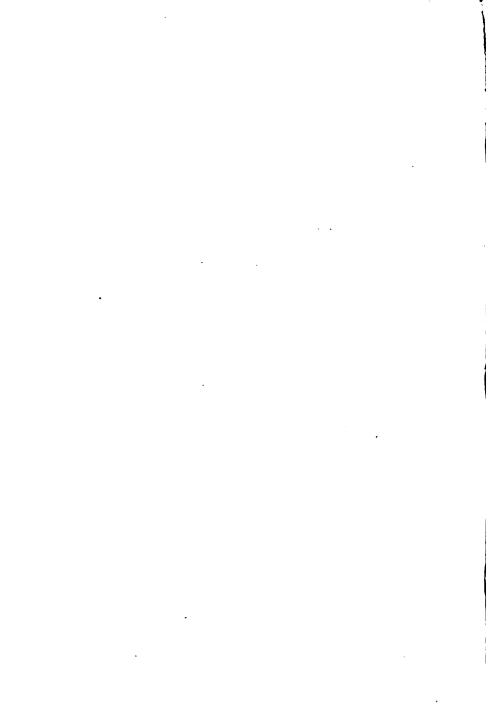




Fig. 32.—The "Blackburn" Window in the East Aisle of All Saints' Church, North Street, York.

From a water-colour drawing in the Museum.



distinctive effect. An alternative and hardly less usual treatment was to introduce into the base a subsidiary niche, in which to depict, in small, some subject illustrative of the life of the personage represented on a larger scale above. Canopies of two, three or even more tiers were thus employed (Figs. 32 and 33); but the use of the transom in Perpendicular architecture did away with the difficulty of dealing with very tall openings.

The yellow stain freely introduced on the crocketing of the pinnacles and on the soffits of the arches, now represented in a kind of not very well understood perspective, did not materially affect the silvery look of the white canopy work. But this applies more to English than to foreign glass. In Germany the much more florid canopy in vogue there was glazed occasionally in strong yellow; and the French Flamboyant canopy also simulates gold sometimes.

The pattern of the design differs in different parts of Europe, but the work of a school is apt to be very much all of a pattern. The school, so called, was more properly a workshop: the element of economy entered more closely into mediæval manufacture than it is customary to admit. Perhaps in those days, as certainly in these, the vogue of the canopy was largely a matter of trade expediency.

In France, where the canopy was not so universal as with us, another expedient was adopted which savours also of the shop, that, namely, of dividing the window horizontally, and accepting the lines given by the bars and mullions as so many oblong compartments, each enclosing its separate subject. The effect of this is often better than might have been expected to result from such a perfunctory system of design; but it is not easy to make out what it is all about, and when some subjects extend across the mullion into a neighbouring light, and some are confined to a single opening, it is a work of discovery, and, indeed, of a patient discoverer, to unriddle the design. Even

where the little subjects keep in bounds, and have an apology for canopy to frame them, as, for example, in the great East window at York Minster, the story might almost as well not have been told. Of the many who admire the decorative effect of the glass, how few ever take the pains to read it! only here and there perhaps an antiquary.

The persistence of the architectural idea in glass design, would strike one as strange, were it not that canopy-work occurs from first to last throughout the Gothic period, and much later too. The notion of a stone-like niche in glass, to. frame a picture already framed by real architecture, does not as such commend itself to the logical mind. Supposing it necessary to surround the glass picture with a frame of glass (and it is true the stonework of the window does not effectively frame it; you seem somehow to be looking at it through the opening in the wall) the workmanlike way would be, to construct any such framework on the lines, not of masonry, however far removed from stone, but of glazing. Still, granted the poverty of invention implied by the resort to imitation architecture, and the little interest excited by the forms it takes in glass, it must be allowed that the Perpendicular canopy proved a singularly effective means of enshrining, in a mass of white glass, colour enough to give a - window richness without great loss of light. Dull as a Perpendicular canopy may be in detail, a better scheme for the distribution of white and colour in a window remains yet to be devised.

Colour is the cause of a stained glass window; it condones no matter what form; and the colour of good glass has a charm which takes one willingly captive. The most absolutely satisfactory windows will often not bear the least critical examination of their design and drawing. That is yery apparent when it comes to illustrating them (as in these pages) in black and white. The result is often such as to

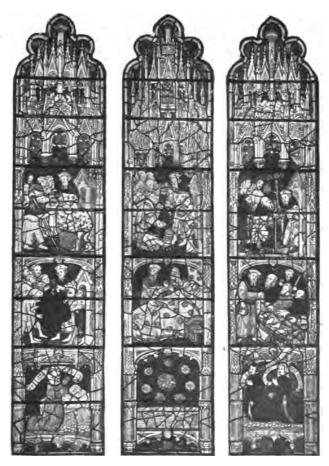


Fig. 33.—Window, "The Corporal Works of Mercy," in the North Aisle, All Saints' Church, North Street, York.

From a water-colour drawing in the Museum.



make those who have not seen the glass ask themselves, whatever can there be to admire in things so ugly.

In glass-painting, as in other arts, such ornamental detail as happened not to be in imitation of architectural features was less naturalistic in the fifteenth century than in the



FIG. 34.—PANEL OF OLD GLASS.

In the Museum, the bequest of Henry Vaughan, Esq. (No. 937-1900).

fourteenth. It was still, it may be said, founded upon natural foliage, but the forms of nature were deliberately reduced to the terms of ornament, of elaborate ornament it might be, fantastic foliation, twisting about and curling over, or embossed more after the manner of beaten metal than of

painted glass; but in any case it was far removed from realism.

Nowhere is this more plainly shown than in the treatment of the tree of Jesse. Its branches were sometimes more nearly allied to scrollwork than to any actual growth in



Fig. 35.—Perpendicular Tracery Light.
From a tracing in the Art Library of the Museum.

nature; but even when, as was usually the case in this country, the vine-stock was the chosen type, it was removed from its original, no less by the character of the drawing than by the colour of the foliage. Usually it was in white and

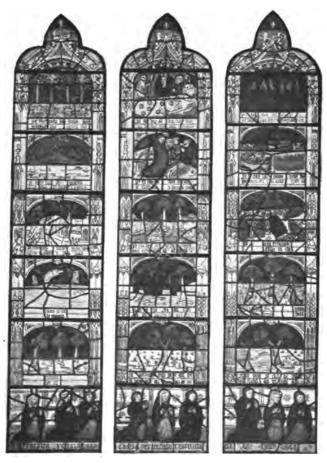
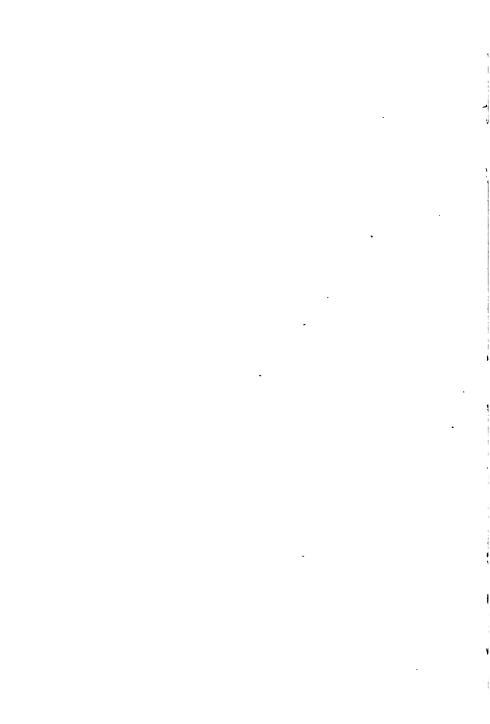


Fig. 36.—The "Bede" Window in the North Aisle of All Saints' Church, North Street, York.

From a water-colour drawing in the Museum.



stain. Where the leaves were coloured, the stems were white. At first the branches still make a bower for the figures, later the tree bursts out, as it were, into demi-figures as though they were flowers or fruits upon it. The later the work the freer the growth, and the less the pretence of framing the figures formally in foliage. Windows very rich in colour throughout occur still in Late Gothic work, but comparatively rarely.

Windows all in white and stain are of not uncommon occurrence, with figures, usually about as large in scale as the width of the light will allow, on a background of diamond-shaped quarries, very lightly diapered with paint and stain.

Merely ornamental grisaille takes now the form of simple quarry work. Not seldom the white figure on a quarry ground is emphasized by being shown against a coloured screen or curtain ending somewhere below the shoulders of the figure. The head is distinguished, as heretofore, by a nimbus, but it is now almost invariably of white, or white and stain, cut indeed out of one piece of glass with the white flesh (Figs. 34 and 35). This treatment of the head and nimbus in one is the practice also in figure work into which a fair amount of strong colour enters; and may be taken, indeed, as a sign of the period.

Since the tracery of a Perpendicular window took in the main upright lines, there was no difficulty in treating the smaller openings in it much in the same way as the larger lights below. That is what was commonly done. And, though there is something rather unsatisfactory in the abrupt change of scale necessitated by the smaller dimensions of the tracery lights, the effect of the little canopied figures up there is pleasing enough.

The flowing tracery of Flamboyant or other florid foreign windows compelled a different treatment; but even the most

fantastic shapes could be filled by floating angels with their wings outspread, bearing scrolls or emblems. In England it was customary to keep the tracery of a Late Gothic window light in colour even when the lower part of it was fairly rich.

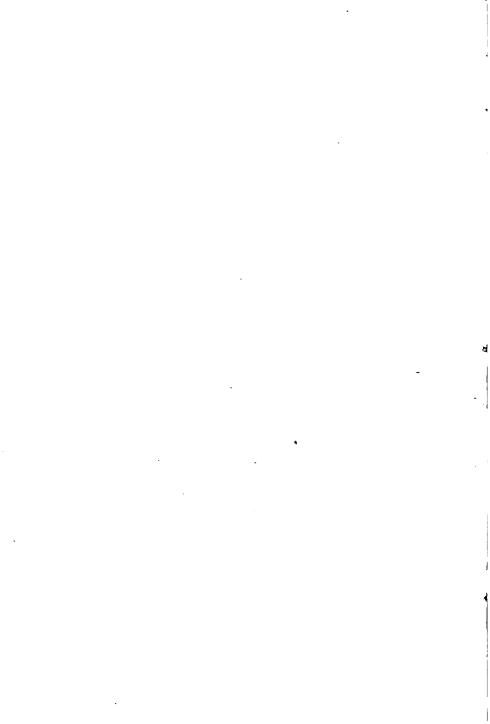
In pursuance of the pictorial idea it became at length not very unusual to take the main lights of the window as the field for a single subject, or (if it happened to be a very large window) to allot to each subject a group of lights, a practice commenced already in the fourteenth century. The architecture or the landscape appropriate to the scene helped materially to keep the picture together; and both alike were now treated with some regard to perspective. The background also developed into blue sky, painted so as to suggest the clouds upon it. Something like aërial effect was even attempted, not without a measure of success, when on a small scale. The French glass-painters in particular excelled in landscape backgrounds, painted upon grey-blue glass, their success in this being largely due to the frank acceptance of a convention based upon the conditions of glazing and painting. In the earlier glass, when a deep blue pot-metal was used for the sky, the only means of indicating clouds in it was to glaze them in white or grey-blue glass, whether in the arbitrary form of cloud patterns (as in the thirteenth century medallions) or in streaks of conventional cloud banks. With the use of a much lighter blue it became possible to paint upon it, not clouds merely, but landscape receding into the distance, the sky on the horizon broken by tree trunks in the foreground and by the roofs of quaintly towered buildings; or if the subject called for an interior, the vaults of a building were depicted, with a peep through the arches into the open.

The landscape effect was enhanced by the use of yellow stain, giving green, for the verdure; whilst, perhaps, dark hills beyond were glazed in purple against the blue, not only



Fig. 37.—Figure of St. Bartholomew from Winchester College Chapel.

In the Museum (No. 4237-1855).



producing always harmonious colour, but giving quite reality enough to the impression. The beauty of it was that the artist kept within the restrictions imposed upon him by his means. He gave us pictures, only, not to be condemned,



Fig. 38.—Portion of an Early Sixteenth Century Window.

In the Museum (No. 5941—1858).

because they were honest glass-pictures. English glass-painters of the period adopted as a rule a yet sterner convention, using (always it seems with an idea of framing their colour) a white background, and painting the landscape

upon that, staining the trees, and the grass in places, yellow. The effect of this, in, for example, the windows at Great Malvern, is delightful. In the great windows at King's College Chapel, Cambridge, the more naturalistic landscape backgrounds are in white and yellow, and the sky above is blue with white clouds against it, but on a scale so vast that glazing enters inevitably into the scheme of execution. The charm of all painted background is in its delicacy, best to be appreciated in work of moderate dimensions, placed not far from the eye.

The more pictorial quality of Late Gothic glass is only justified by the extraordinary development in technical accomplishment which took place during the century. The artist is no longer feeling his way towards draughtsmanship, or trying to paint on glass, he is a master of his craft, knowing well what he can do and doing it with apparent ease. One may prefer the naïve mosaic of an earlier date, but there is no denying its archaic character. It is mere pedantry to question the right of an artist to do what he has proved himself able to do right well. For either artist, his method was for him the right, the only, one.

What has been said about the great predominance of white glass in Late Gothic does not apply so generally to foreign work as to English. We get, until the end of the period, together with light toned windows (as at Troyes, Châlons, Rouen, Beauvais, as well as at Nuremberg, Ulm and elsewhere in France and Germany), windows very deep and rich in colour throughout. In Italy, too, full rich colour is the rule, reminding one (as at Bologna and in the Duomo, at Florence) more of the colour-scheme of the primitive painters than of Perpendicular glass-workers.

Later Gothic glass-painting distinguishes itself always more and more by the mastery of drawing shown in it, by the delicacy of its painting, and, above all, by the modelling of the flesh, now painted by a more subtle process of stippling than that used in the preceding century. Stippling or matting of the coat of paint was especially necessary when it came, as it



FIG. 39.—HEAD OF A BISHOP IN THE EAST WINDOW AT YORK MINSTER.

From a water-colour drawing in the Art Library of the Museum.

did in late work, to painting large surfaces of white glass, if all its brilliancy was not to be lost; and the adoption of the method went with, and encouraged, the employment of the great quantity of white glass so characteristic of fifteenth century windows.

At first the practice was, to paint shadows thinly, stipple them, and enforce them with hatchings or scribblings of fine

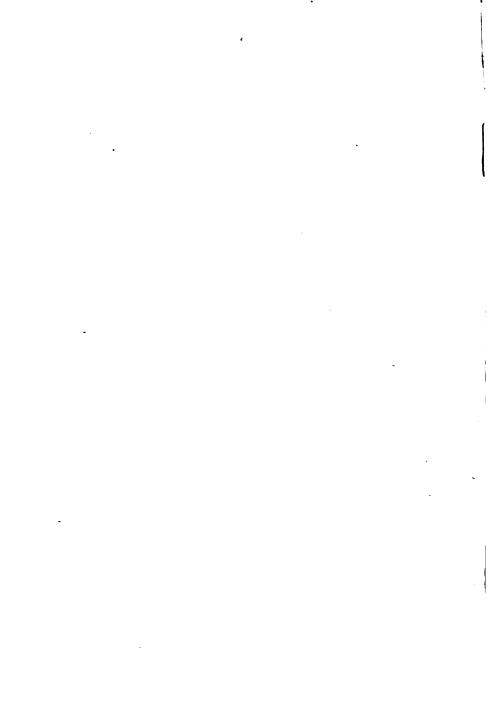
lines over that. A further development GLASS was, having traced the outlines and PAINTING. burnt them safely in, to coat the glass all over with a film of brown, to matt the painted surface, and then to wipe out the parts where the glass was meant to be clear, and with a stiff brush to scrub away from other portions of it just so much of the paint as would give the gradation of tint required; finally the painter put in crisp, dark touches with the brush, and with the pointed end of the stick scraped out sharp lines of light. In very delicate work the point played a more important part than the pencil; in fact, the art of the painter consisted rather in the removal than in the laying on of pigment. The process was really more like etching than painting. By means of it, and of its repetition it might be several times, firing the glass each time again, the utmost degree of modelling was attained, without the use of heavy masses of paint. The effect was, in the happiest result, as compared to forceful chiaroscuro, what delicate low relief is to sculpture standing out from the ground. The allimportant thing was to get light into the shadows. that ceased to be attempted all the glory of glass was gone.

In later Gothic work the artist chose his glass with a care which his predecessors had not so much occasion to exercise, since accidental variations in colour did not seriously affect their scheme of design. In proportion as the aim was pictorial, it became necessary to select from amidst the unevenly coloured sheets of glass the particular piece which, by its gradation from light to dark, suggested the roundness of the fold of drapery to be rendered, and so forth. Cunning use was made also of the curiously streaked, spotted, or otherwise variegated, pieces of



Fig. 40.—Late Gothic Flesh Painting from Fragments of Fifteenth Century Flemish Glass.

In the Museum (No. 513-1892).



glass which often came out of the melting pot. Ruby glass was especially subject to such freaks; and these were turned to account in the shafts of columns and other architectural

features, producing very much the impression of marble. Glass-makers went so far as to "sprinkle" the glass in the making, with a view to variegated colour, and glaziers manipulated it after it was made. This was possible owing to the composition of ruby, and some other kinds of glass, and to the device, adopted towards the second half of the fifteenth century, of abrading its surface.

Ruby glass, it should be explained, is an exception to the rule that pot-metal glass is coloured throughont. The colouring matter employed in it is so dense that a sheet of ruby substantial enough for its purpose would be no longer translucent. What is called ruby glass is therefore red only part of the way through—the coloured part relatively about as thick as the jam upon a slice of bread. But the layer of red is not laid upon a sheet of white: the blower wraps around the lump of dough-like glass attached to his blowpipe a molten coating of the other kind, and blows the two together into the bubble which is the beginning of a sheet or disc of coated glass.

When colour was confined to one surface of the glass only, it was quite possible, however laborious, to grind portions of it away, leaving the white bare of colour. This is what the men of the fifteenth century did, producing by that means dots, lines, and patterns even, of white upon ruby. To produce a yellow pattern they had only to stain the white; and by yellowing only a portion of the exposed white they got very much the effect of embroidery in gold and pearls upon ruby velvet.

They took also to making coated glass of other colours, blue in particular, upon which, by the aid of abrasion and stain,

they got white, yellow, and green upon blue glass. Stain upon a palish purple glass gave olive.

Another means employed to get colours upon white without the use of lead was, to apply to white glass vitreous "pastes" of colour and to melt them on to it in the fire. In that way they got jewels of red and blue and purple in a mitre or king's crown, itself stained a golden yellow, with pearls of white encircling the jewels. As it proves, these jewels are seldom found intact; time has stolen them away; or to speak strictly the action of the weather has in time prevailed. The substance of the little pieces applied was not of the same consistency as the white ground; the shrinkage and expansion of the white glass and of the coloured pastes according to the temperature was not equal; and the jewels were apt to work themselves free from their setting. Theophilus, writing perhaps at the beginning of the thirteenth century, tells how to apply colour in this way; but we do not find examples of it until about the fourteenth century, and even then it was not a common practice.

Reliance upon the combined expedients of abrasion and stain argues a date not much earlier than 1450. Notwithstanding the labour involved in abrasion, it occurs constantly in late figure work of the richer kind, and may even be said to give something of its character to late fifteenth century glass. Nowadays, what was once laboriously ground away is easily eaten out by acid.

Deep toned glass continued always to be used even in windows composed largely of white; and the effect of intense colour set judiciously in silvery light is extremely happy; but paler tints also were employed, with the result sometimes of a much thinner look, though the material itself may have been substantial enough. Red glass was in later days often less ruby-like in colour, more scarlet; blue was lighter and grayer in tint; purple was no longer always



Fig. 41.—Portion of the "Blackburn" Window in the East Aisle of All Saints' Church, North Street, York.

From a water-colour drawing in the Museum.

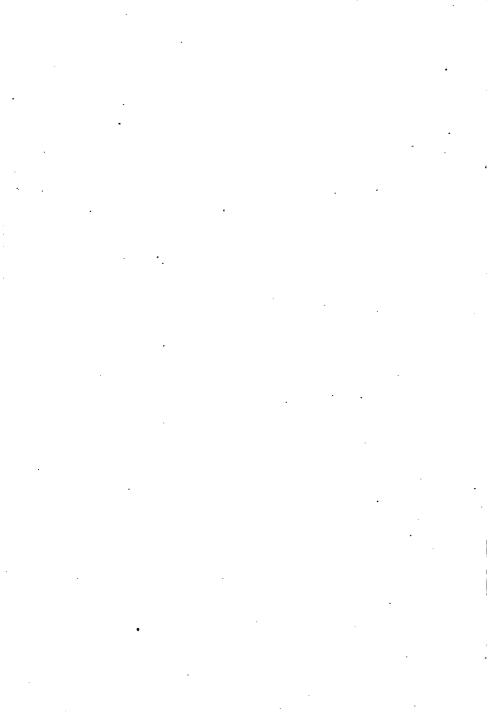
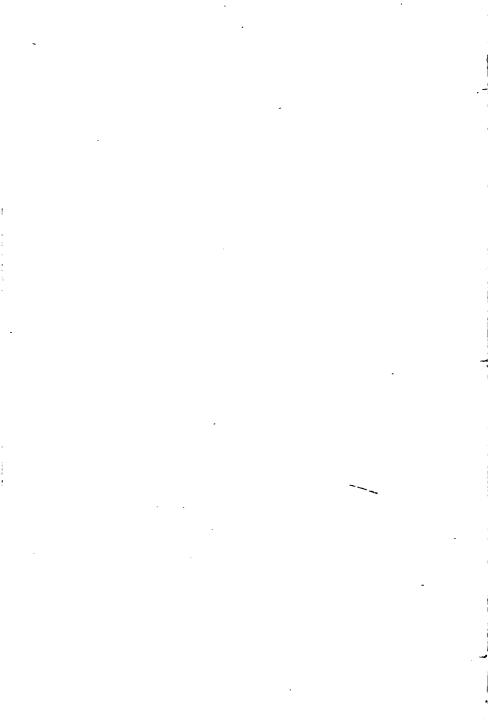




Fig. 42.—Two Late Gothic Lights at Fairford Church, Gloucestershire.

From coloured tracings in the Museum.



brownish, but ranged to violet, and, in the lighter shades, to lilac; a peculiar rosy pink glass was made also.

As for white glass, the natural endeavour was from the first to get it purer. The attainment of that end was not unmixed gain to art. The green, yellow, or dusky tint, due to the impurity of the sand of which



Fig. 43.—Figures of Donors in St. William's Window, York Minster.

From a coloured drawing in the Art Library of the Museum.

it was made, gave mellowness to it; and the horniness or slight opacity which came of scientifically speaking imperfect manufacture, was a quality by no means lightly to be sacrificed even for the sake of light. Late Gothic glass was not yet clear and colourless, but it was already lighter than it was, and cooler. There is blue or green

in it, but it does not look either green or blue, having, rather, the effect of silvery white, which is indeed a characteristic of Perpendicular glass.

In glass of the Late Gothic period England comes to the front; though we have nothing perhaps so masterly as the great windows on the North side of the nave at Cologne. The Fairford windows (Fig. 42) are probably not English, anxious as patriotism may be to claim them as such. In any case these belong to the end of the period.

Quite early in the style, belonging indeed to the last ten or twenty years of the fourteenth century, are the fine windows in the ante-chapel of New College Chapel, Oxford. The credit of this, as that of the Winchester glass, dating about the beginning of the fifteenth century, portions of which are now in the Museum (Figs. 31 and 37), is attributed to William of Wykeham.

Another work of the first years of the century is the great East window at York Minster, perhaps the biggest window in the world. Not only the Minster but numerous other churches in the old city of York are extraordinarily rich in Late glass, rather typically English.

The abbey church at Great Malvern is another storehouse of good work, ranging from the beginning to the end of the period. Other good examples are at Merton and All Souls Colleges, Oxford. St. Mary's, Shrewsbury, contains some excellent Flemish or German work, as do the Church of St. Laurence at Nuremberg, the cathedral at Ulm, and the chapel of Jacques Cœur in Bourges Cathedral.

## VI.

## RENAISSANCE.

The earlier Renaissance period widely overlapped the later Gothic. Whether a window happened to be designed in one style or the other, depended more upon where it was designed than precisely when it was made. Many a time it was very much a question of conservatism in the one case or of enterprise in the other, and depended as much upon the artist's age as



FIG. 44.—FROM GLASS IN THE MUSEUM.

In the Museum, the bequest of Henry Vaughan, Esq. (No. 931-1900).

upon anything: older men would cling as naturally to the way of their youth as a new generation would run to meet the future.

The difference, then, between Late Gothic and Early

Renaissance glass was almost entirely one of detail. According as the costume of the figures, the architecture, the foliage, or the ornament, is in the older or the newer fashion, we attribute, it to one style or the other. Judged by details of ornament and architecture most of the splendid windows in the choir at Auch (1507-1513) must be called Renaissance; but the spirit of the work is expressly Gothic.

Renaissance technique was at first the same as before; it remained, that is to say, glass-painting on a basis of mosaic; the colour (with the exceptions already mentioned) was in the glass (pot-metal), the paint was always the same brown pigment, used only to express form, to define details clearly, to give roundness to the shapes, and at most to qualify colour.

It may fairly be said, it was the salt of Gothic tradition which for a time kept sweet the glass of the Renaissance. At all events, as that died out the painter lost sight of the fact that it was glass with which he had to do, and, in the vain attempt at picture, lost qualities on which a window depends for all its charm. Still, even in the early days of the new period the effect of the glass was very different indeed from what it had been; and before long the new departure proclaimed itself in terms there was no mistaking.

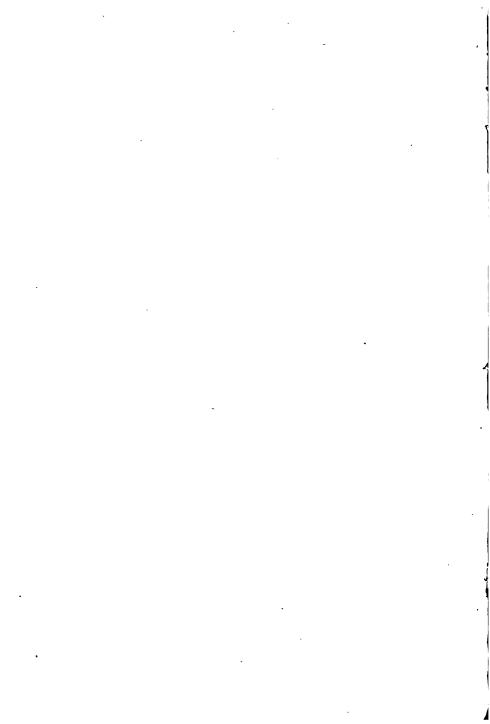
The Renaissance canopy, even when it was planned more or less on the lines of the Gothic, was strikingly different in design, no longer all in white but richly stained, with colour in the wreaths of foliage and other classical "properties" depending from it; even though, here and there, the cusping of a round arch showed the artist to be still in a state of transition from one style to the other, anxious to be up-to-date, but not yet quite at home in the new manner.

No doubt the workmanlike traditions of the Gothic glazier yielded presently to the altogether pictorial practice which we associate with the Renaissance, and which is admittedly the characteristic most in evidence in sixteenth century work.



Fig. 45.—The Circumcision, forming Part of the East Window at Santa Maria Novella, Florence (1491).

From a water-colour drawing in the Museum.



But we are accustomed to take it too readily for granted that Renaissance glass was entirely given over to the painter. Eventually it was; but at the first the colour was mosaic, quite as mosaic as the later Gothic work contemporary with You may see that in the windows of Santa Maria Novella, at Florence (Fig. 45), no less than in the Cathedral windows there, and in the windows at Milan Cathedral (Fig. 46). Moreover, there are to be found in France, at Rouen for example, and yet more commonly in Italy, at Arezzo, where the finest work of the famous William of Marseilles is to be seen, at Bologna; at Florence, and elsewhere (Italian glass strictly mosaic), arabesque ornament of pronounced Renaissance type, executed with as strict a regard to the conditions of mosaic as the work of the thirteenth century. Indeed, the old method in the hands of the new artist is only more perfectly satisfactory than in those of the archaic workman, so satisfactory as to make us regret, for all the glories of pictorial glass-painting, that the men of the Renaissance did not at all events work out this vein of glass intrinsically mosaic, before forsaking it, as they did, for painting almost irrespective of the quality of pot-metal glass.

Even, as it was said, whilst the traditions of mosaic colour were still preserved, marked change took place in window design. Figure subjects, as in the case of the Last Supper and the Adoration of the Kings, parts of which are here illustrated (Figs. 47 and 48), were commonly carried right across a window of many lights, and at last the whole area of the window came to be accepted as the field of one vast picture, extending as far as it was possible into the tracery. And, where the idea of a white canopy was retained, as it often was, it not only took quite different shape but was conceived in a quite different spirit. At most it merely framed the figures as some architectural composition frames an altar-piece. Frequently it did not pretend to enclose them at all.

The artist used it often merely as a background to his figures, a shrine against which the forms of kneeling donors and their patron saints were relieved; for by this time the donor of a window had ceased to hide the light of his munificence under any show of modesty, and his portraiture had become a feature in window design. The noblest examples of this treatment are in the transept windows of St. Gudule at Brussels, by Bernard Van Orley, not quite according to the rules of glass, but in their way magnificent.

A spacious effect was produced by, as it were, building up in the window an architectural composition, including rather than enclosing figures framed, it might be, by some near arch, but more or less entangled with receding architecture seen through it in perspective. But this was a device of a period no longer to be described as early Renaissance.

The artists of the Renaissance appear to have adopted the ideal if not of framing their picture in white canopy work at least of binding it together by means of architecture painted on white glass (Fig. 48); but, as the sixteenth century advanced, any such purpose was soon stultified by their so obscuring large areas of the glass with paint that it was no longer to be accepted as white. Shadow will not fulfil the function of light.

The divergence between the pictorial and the decorative direction widened with the development of the newer pictorial ideal. There was little or nothing in the pictures of the Primitives which might not fairly be translated into glass. On the other hand the qualities of tone and shadow, as later painters came to conceive these qualities, were obtained, even in the qualified degree in which they were obtainable, only by a loss of the qualities of pure, luminous, and translucent colour peculiar to glass.

Painting itself progresses by the sacrifice of qualities no longer esteemed for others momentarily more highly prized.



Fig. 46.—Panel of a Window in Milan Cathedral.

New departures may or may not be for the best, they are at least inevitable. The artist is justified by his art. But the sacrifice of qualities easy to get in one particular art for others not to be got in it, recalls the fable of the dog who dropped the substance for the shadow.

Painting upon glass, from having been in the beginning absolutely subsidiary to glazing, became during the Gothic period more and more its rival. Eventually it not only took precedence of glazing but took the place of it, being used as a means, no longer only of rendering form, but of giving colour.

By the middle of the sixteenth century the use of enamel colour was fully established. The brown pigment used from the first was, literally speaking, enamel; but what is generally speaking understood by enamel colour, is the use of vitreous enamel to give colour, and not merely to stop out the light.

It began by degrees. It was used at first for the flesh tints, an ochreish red being used for modelling the heads and hands, and, earlier still, for tinting them on the other side of the glass after they had been painted in brown. Then blue enamel was used upon pale blue or white to give more delicate gradations of tint in the skies, and eventually other enamel colours. Enamel colour was used also upon coloured glass to give depth to the shadows; for by this time a thinner, evener, and poorer quality of glass came to be made, which served the immediate purpose of the painter better than deep, dense, and unequally coloured glass.

The extent to which the consideration of painting took precedence of glazing, is to be measured by the fact that in the end even the practice of scheming the unavoidable glazing so that it might fall into the outlines of the picture was abandoned. The artist seems, rather, to have designed his picture and left it to the glazier to lead it up in rectangular panes of convenient size. He does not appear to have so

much as begun by setting out upon his cartoon the square lines of the glazing, and accommodating his drawing to them; they are allowed, at times, absolutely to cut across the flesh, in a way that the least consideration would have shown to be as unnecessary as it was awkward. It is strange how, in the interests of the pictorial, the picture was thus spoilt.

The astonishing skill of the later pictorial glass-painters goes only to prove the futility of their endeavour. What the brothers Crabeth of Gouda, and Linard Gontier of Troyes, could not do, glass-painters may well despair of doing. It is in the nature of things that colour upon the surface of glass cannot have the limpid depth and luminosity of colour suspended, as it were, in the glass itself, and that to deepen the colour of glass by painting upon it is to dull it. Enamel colour is by comparison with pot-metal, poor, thin, and garish. Painted shadow is heavy, lacking at once the translucency of glass and the transparency of shadow; for its depth is obtained only by the density of the opaque pigment used.

Otherwise the proceeding of the enamel painter was not very different from that of the painter in oils. His pigments were metallic oxides, mixed with a sufficiency of powdered glass, or its equivalent in the silicates, etc., which go to make glass. At a sufficient temperature in the kiln, the vitreous compound was fused on to the glass; but it did not penetrate it; and, even when firmly attached, it was not secure. It was difficult to make sure that the contraction and expansion should be equal in the case of the glass and of the vitreous enamel upon it; and, unless that was so, the two were certain, under exposure to the weather, to work themselves asunder. As a matter of fact, a great part of the enamel painting in old windows has flaked off, exposing bare white glass, to the utter ruin of that pictorial effect which was its cause.

The appliances, even of the seventeenth century glass workers, did not permit the making of great sheets of glass,



Fig. 47.—Portion of "The Adoration of the Magi," in Three Lights. French, ca. 1525.

In the Museum (No. 2206-1855).



nor yet the firing them, had they been made. The window had still to be put together, the separate pieces connected, as before, by strips of lead. Glass-painters continued, therefore, to use pot-metal colour where it answered their purpose; and, in proportion as they used it, they succeeded in getting rich colour. But ultra delicacy and refinement (which were the raison d'étre of enamel), and strong glazing lines did not go well together. The leads were apt to look brutal, the painting to look weak, by comparison.

The doings of the Early Renaissance glass-painters make one hesitate to say they were not justified. They did a new thing in their own way; and who shall say they had not a right to go that way, when it led to such superb results? But there is no denying that the way led to the degradation of glass to the position of a mere translucent ground to paint on, in colour which had neither the permanence nor the depth and brilliance which had been the glory of older glass. In fact, by the bitter irony of events, the new departure, which glass-painters welcomed as the way to artistic triumphs greater than had ever before been achieved, led not only out of the right road but straight to the débacle of design.

The distinguishing characteristic of fully-developed Renaissance glass is its pictorial treatment, pictorial, that is to say, as the painter in oil conceived it, seeking ever more and more the illusion of natural effect. Architecture was now drawn in startling perspective, figures were rendered with all possible actuality of light and shade, in landscape even something of atmospheric distance was attempted.

Glass was designed less as a window than as a picture supposed to be seen through it. The canopy was, as it were, built up in the opening; above and behind it was, perhaps, pale blue glass, by way of sky beyond, or plain white, glazed in some simple geometric pattern, deliberately dissociating itself from that part of the window which formed the picture.

This may be regarded as a distinctly new idea. It is true that you find in many German churches (at St. Sebald's, Nuremberg, for example), fourteenth century windows in which the coloured glass does not extend to the top of the window, the upper part of it being glazed with plain quarries or rounds; but this appears to have been, either for the sake of economy or with a view to getting some light into the building. In any case, the glass itself was not white, nor clear and colourless enough to suggest the idea of space; it was obviously part of the window, though not of the colour scheme. Even so, the idea of a window half in coloured glass half in white was not a happy one.

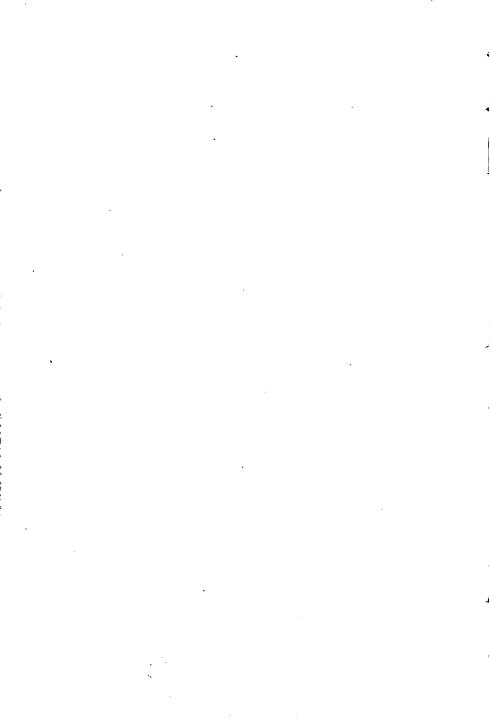
The canopy, at first formal and severe, became by degrees less a frame or setting to the figures than an architectural background to them. Ornamental detail, no longer arabesque, took the form of festoons, ribands, bunches of fruit, etc., depending either from canopy-work or cartouches—betraying naturally a later period. Figure design was the almost invariable rule. Ornamental windows consisted sometimes of arabesque in white and stain, painted upon panes of clear white, with or without a border; but the more typical treatment was not to define the window shape by any border within it, trusting to the masonry to frame the glass, which, as a matter of fact, it does not satisfactorily do.

Painted quarries continued in this country to be used, bearing usually a cypher, monogram, badge, or other heraldic or significant device. The commoner practice abroad was, to glaze, instead, plain white glass in geometric patterns. But the later artists did not show, in devising such patterns, the art or ingenuity of the early glaziers. Evidently plain glazing was to the men of the sixteenth and seventeenth centuries no better than a makeshift. They showed in this the slight esteem in which they held the material for which they deigned to design. How should they esteem what they did not understand?



Fig. 48.—Portion of The Last Supper, in Three Lights. Flemish (1542).

In the Museum. Lent by His Majesty the King.



So it was that in the seventeenth century much skill of draughtsmanship and painting was mis-spent on glass which has none of the qualities which by rights belong to it. It is difficult, however, to speak generally of later glass. The Renaissance was the period of "go as you please," and the personality of the artist counts more and more as we approach modern times. Still, not even the most powerful designers of the seventeenth century succeeded in compelling glass to the purpose of mere pictorial painting.

The one quite new departure in the way of technique was the use of enamel; and by it you may safely date a window as post-Gothic, though it was not until the beginning of the seventeenth century that mosaic gave way to it almost entirely.

All the technical devices of the later Gothic glazier and glass-painter were carried to a further degre of perfection by Renaissance artists of the early sixteenth century. Painting was carried to a point of quite astonishing perfection, the practice of scraping out lights, and of finishing with the point, a needle point it might be, being especially developed. Some painters were so skilful, also, in floating-on colour, that, in many cases, they had no need to stipple it. They painted, too, in stain, as it were modelling it, so as to give the effect of embossed gold.

The effect of gold and silver was mentioned as being characteristic of late Gothic work; in Renaissance glass we find effects of gold and copper, produced by staining upon stain, in such a way as to show the complete control of the artist over the fire.

A practice peculiar to the Renaissance was the coating of white glass with a thin film of white enamel at the back. Absolutely clear white glass such as was now manufactured had the effect of open space seen through the interstices of the ornament painted on it. A portrait, or other head,

painted on clear glass was, as it were, seen against the light.

The maximum of pictorial effect to be got by painting upon glass, without serious hurt to its translucence, was soon reached. After the middle of the sixteenth century, painters sacrificed more and more of that precious quality, until, soon after the beginning of the seventeenth, it was a thing of the past.

The abandonment of all reliance upon glazing, and the dependence upon glass-painting, mark at once the progress of time and the decline of art. Eventually the traditions of craftsmanship were lost, only to be taken up again in our own day. The old secrets, of which we hear too much, have been discovered anew; there is no longer any lost art. What we have lost is the habit of submitting ourselves "duly and reverently" to the conditions imposed upon the artist by the craft of his adoption. We may think ourselves above obedience to the laws of light and optics, but they have their revenge upon us, and play havoc with our would-be pictures.

The transition from Gothic to Renaissance is splendidly illustrated at Auch, where there is a wonderful series of windows, all by one man, and all executed between 1507 and 1513, in which the detail of the design is in the main Renaissance, the manner of work Gothic. Somewhat in the same spirit, though very different in manner, are the windows in the churches of St. Patrice and St. Vincent at Rouen.

The famous windows of Van Orley, at St. Gudule, Brussels, though fairly early in the new century strike an emphatically new note in design.

Splendid glass is to be found at Liège, Brou, Conches, Montmorency, Ecouen, Beauvais, St. Etienne at Paris, and in numberless other French churches. In England we have at Lichfield Cathedral some fine Flemish glass, and at King's College, Cambridge, a chapel-full of masterly pictorial work,

which may or may not be of English design; it appears, at all events, to have been executed in England. There are remains of a fine Jesse window dispersed in the eastern windows at St. George's, Hanover Square, London.

Dying traditions flicker up again for a moment with extraordinary brilliance at Gouda, in Holland, where the brothers Crabeth kept the glazier's art alive to the very end of the sixteenth century, and at Troyes, where Linard Gontier made a name for himself in spite of the period at which he lived.

As a warning against the evil ways of the seventeenth century we have the seventeenth century windows of Lincoln's Inn Chapel, London.

More interesting work, into which enamel enters largely, was done by the Van Linges, at Oxford; but there, too, one is impressed rather with what enamel will not do than with what it can, even in skilful hands, accomplish.



Fig. 49.—Corner Quarry from a Dutch Domestic Window (1638).

In the Museum.

## VII.

## **DOMESTIC**

There is no great quantity of church glass in the Victoria and Albert Museum. What remains to us is happily yet in the churches for which it was designed, and perhaps the wonder is so much has found its way to the national collection. And though the sentiment which clings to the art of other days seems to evaporate in the dry air of a modern museum, such places undoubtedly do afford opportunities of comparison very valuable to the student; he is able there to study closely, and at leisure, work which in its place in some high clerestory was beyond the reach of investigation.

The larger portion of glass to be found in any museum is almost invariably of domestic character, rounds of white and stain, or other grisaille.

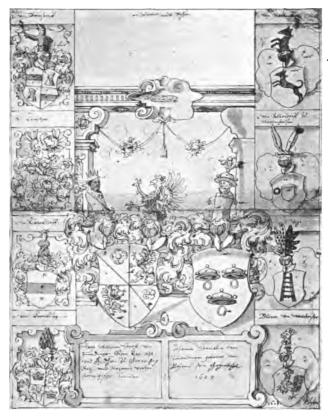
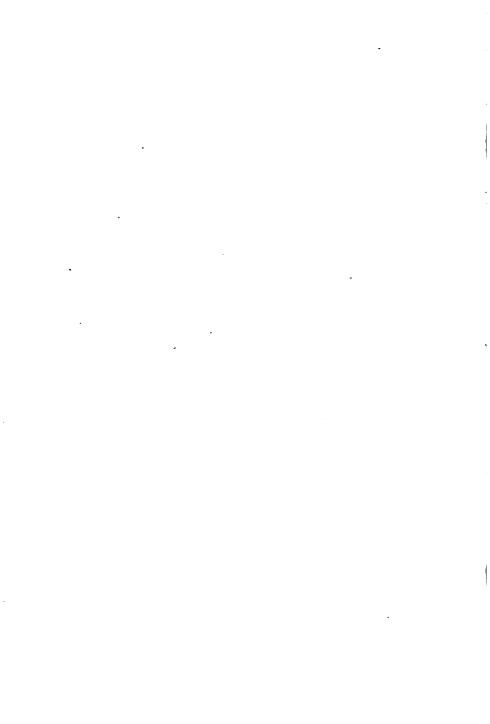


Fig. 50.—From a Working Drawing for Glass by G. A. Vischer, 1603.

In the Art Library of the Museum.



Chamber windows, domestic or civil, assumed in the sixteenth and seventeenth centuries very considerable importance, and afforded, owing to their more modest dimensions, and to their position so much nearer to the eye than most church windows, excuse and scope for that more delicate workmanship which the painter had come by that time (Fig. 51) to seek. In work of this description the Swiss glass-painters



FIG. 51.—QUARRY FROM A DUTCH DOMESTIC WINDOW (1638).

In the Museum (No. 5943—1859).

greatly excelled. They were masters of technique. Traditions both of treatment and workmanship survived among them long after they had died out of general practice elsewhere. It seems to have been the local custom of town councils and trade guilds to present to neighbouring corporations or to the freemen of friendly guilds, windows for their Halls, in the

production of which the local glass-painter was put upon his mettle, and showed what he could do. A wonderful



FIG. 52.—FROM A WORKING DRAWING FOR GLASS BY
G. A. VISCHER, 1588.

In the Art Library of the Museum.

series of such windows is to be found in the museum at Lucerne; but there is hardly an important municipal museum, to say nothing of national collections, which does not contain



Fig. 53.—From a Working Drawing for Glass.

In the Art Library of the Museum.

examples of clever work of this kind. It claims, therefore, in a museum handbook, rather more consideration than, on

the ground of architectural dignity or decorative effectiveness, it strictly deserves.



FIG. 54.—FROM A WORKING DRAWING FOR GLASS.

In the Art Library of the Museum.

The not very numerous examples in the Museum are enough to show the form it generally took. Symbolic figures, subjects from the Bible or from profane history, with ornamental "trimmings" as a rule more or less architectural, are set forth in miniature with great elaboration. Heraldry,



FIG. 55.—FROM A WORKING DRAWING FOR GLASS, 1585.

In the Art Library of the Museum.

too, is a conspicuous feature, not here and there a shield of arms, but groups of shields, with florid mantling, and gaily

dressed supporters, the master of the house perhaps in festive garb faced by his wife decked out in all her finery also.

There are to be found in these little domestic windows effects of colour most ingeniously produced by the combined expedients



FIG. 56.—FROM A WORKING DRAWING FOR GLASS.

In the Art Library of the Museum.

of abrading the coloured surface of flashed or coated glass (by this time made in all manner of colours) and staining. The practice was still to use by preference pot-metal glass whenever the scale of the work allowed; and in proportion as this was done, depth and strength of tone were preserved; but the Swiss domestic glass-painters were not as a rule colourists. It is extremely interesting to compare with the glass of this period the drawings for it, which were not seldom by



Fig. 57.—From a Working Drawing for Glass.

In the Art Library of the Museum.

artists of repute. Tobias Stimmer, the Lindmeyers, and other well known draughtsmen worked for glass, if not upon it, and Holbein's famous Stations of the Cross, at Bâle, are neither more nor less than cartoons for window-panes. Naturally, a great number of these drawings have been preserved. The designs in the Library of the Museum

(Illustrations 50 and 52 to 58) appear almost without exception to have been the work of practical glass-painters. The draughtsman has left out of his design such detail as he could rely upon himself to fill in spontaneously upon the glass. All that is necessary for his guidance in the figures and so forth is carefully set down, penned, in fact, with a precision which men of our day might with advantage emulate. Nothing is left vague; the drawing is at once careful and crisp; it does not aim at effect, but gives all that is wanted to help him in painting. You can see that the man thought out his design thoroughly before going to work on the glass. With drawings such as these he was free to give his whole attention to the manipulation, which, upon glass, wants very deft and dexterous doing.

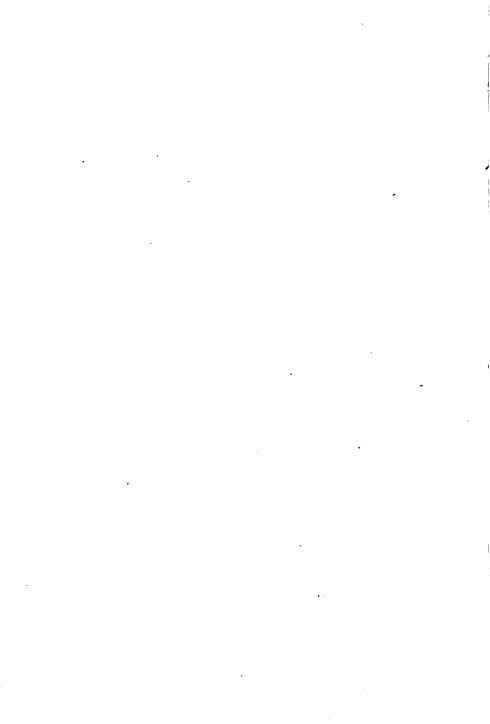
And, as a fact, dexterity could hardly go further than in these Swiss glass-paintings, if that can be called painting which is in the main the scratching away of colour. For the painter relied mostly upon the needlepoint for elaborate finish, though clever men had often their own tricks of execution. Some of them, for example, would float on a tint of brown, and, while it was yet fluid, manipulate it so as to get gradations of modelling astonishingly delicate and subtle.

These latest glass-painters were absolute masters of their trade, but it was something too much a trade with them. They could express themselves perfectly; but they had nothing very decorative to say; they never carry us away, except by their skill. They stimulate the craftsman in us, they scarcely touch the artist.



Fig. 58.—From a Working Drawing for Glass.

In the Art Library of the Museum.



## VIII.

# A SHORT SURVEY OF GLASS DESIGN.

The very shortest survey of the lines of design, the methods of execution, and the qualities of material, characteristic of the various periods at which the art of glazier or glass-painter flourished, will here suffice: even that must necessarily verge on repetition.

The "Medallion" window with shaped bars embodies distinctly the form of composition most markedly peculiar to the thirteenth century, the figure subjects of the twelfth century being framed in the rectangular panels given by the saddle-bars and the stonework of the window. Early grisaille windows did not often include figures, and colour was sparingly introduced into them. In richly-coloured windows the ornament also was in rich colour. The detail of the ornament, always conventional, was at first somewhat Byzantine in character; afterwards it became simpler, as it did in stone carving.

The typical features of the Decorated period were:—the prominence given to the canopy as a framework for figures, and the combination of richly coloured figure work with ornament in grisaille. A common scheme of design was by means of alternate horizontal bands of figures and canopies, or of rich figure work and grisaille, to, as it were, hold the lights of a Decorated window together. Foliated ornament was directly founded upon natural foliage.

This horizontality of treatment was continued in the next period, bands of white canopy work pronouncing themselves more plainly than ever in Perpendicular glass. This framework of white architecture enshrining figures was used in the fifteenth century to the exclusion of all other ornament, excepting only very simple "Quarry" work, which fulfilled much the same purpose of isolating the coloured pictures. It was a common practice in this country to plant figure work (itself often in white and stain) upon a quarry background. With that exception, canopy-work was the rule, unless the whole area of a window was devoted to picture. Such florid foliated ornament as did occur was no longer so natural in type, nor so flat in treatment, as it had been in the previous century.

Towards the sixteenth century the tendency of a picture, not only to occupy the full space of a light, but to extend beyond it, until it spread itself over the entire window, became more and more pronounced.

The idea of the Renaissance was to conceive a glass picture, with or without architectural framing, as something seen through the window opening, no longer as part of the wall of a building. Pictorial composition followed the fashion of the day into a direction less and less calculated to do justice to stained glass. Ornament took, of course, in the earlier Renaissance the form of arabesque, and in the later of cartouche and strap work. Canopies were more or less monumental in design, and the architectural accompaniment of figure-work formed less the framework of a picture than its background.

The progress in figure drawing was from archaism in the twelfth century to consummate accomplishment in the early sixteenth. The stiffly posed figures of the twelfth century, all of one accepted type, clad in close-clinging drapery through which the limbs showed plainly, gave way in the thirteenth to more graphic figures, rude still, but various in expression, and clothed in easier robes, more in the fashion of the period.

Towards the fourteenth century drawing was more mannered; figures were posed with some attempt at grace,

with a swing about them, even when in a standing position, more suggestive of motion than of repose, and not altogether innocent of affectation.

In the fifteenth century artists arrived by degrees at



Fig. 59.—Panel of Old Glass.

In the Museum, the bequest of Henry Vaughan, Esq. (No. 938—1900).

adequate drawing, and eventually at modelling enough to give relief more than sufficient for a window. From that time painting triumphed over glazing design, at the eventual cost of translucency in the window. The initial art of

glazing, all-important in the twelfth and thirteenth centuries, important still in the fourteenth, fifteenth, and early sixteenth centuries, took, as time went on, a less and less important part in glass-design, and lived on at last only as the drudge of painting.

Painting (as may be seen perhaps most plainly in flesh



FIG. 60.—CHARACTERISTIC SPECIMEN OF DIRECT FLESH PAINTING. In the Museum (No. 515-1892).

painting), proceeded from vigorous and emphatic line work, strong enough to hold its own against the glazing, duly exaggerated so as to produce the desired effect in its place, and supplemented only by rude smears of shading, to softly stippled gradation and modelling; but it was not until the fifteenth century that it arrived at delicacy.

Flesh was at first painted on pinkish glass, later upon white, the hair, if fair, stained yellow upon it; and it was the fifteenth century custom to paint the head and nimbus of a saint upon one piece of glass. The use of red enamel in the flesh marks the coming of the Renaissance; but the finest flesh-painting of that period was, as before, usually in cool brown upon white.



Fig. 61.—Characteristic Specimen of Finished Flesh Painting.

In the Museum (No. 517-1892).

Costume and armour followed, like architecture and ornament, the course of fashion; the shape of the heraldic shield (heater shaped at first, then broader, then more florid) tells its tale, as also do the form of the helmet and the character of the mantling, more and more fantastic in its folds. Great pomp of heraldry, and great prominence of donors' portraits, are marks of later date, which is betrayed also by the twirling and twisting about of labels. Inscriptions tell always more than the writer meant. At first Lombardic capitals were used; but towards the fifteenth

century Black letter came in, to be superseded in its turn by the Roman character. And, whereas it had been the common custom to scratch letters out of a ground of solid pigment, so that they shone out in clear white or yellow, later it was more usual to paint them dark upon a white or yellow ground.

Diapering was, in all flourishing periods of glass-painting, a favourite device; but it was more and more profusely used, especially for backgrounds, as 'glass was made thinner and



FIG. 62.—EARLY QUARRIES AT SALISBURY. From a tracing in the Art Library of the Museum.

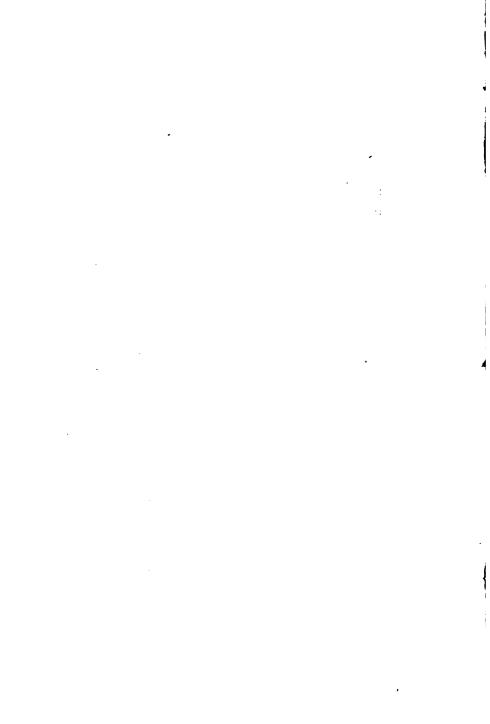
more even in colour. At first the pattern was rather obviously suggested by the facility with which it could be picked out with a point. In the end it was more deliberately in imitation of damask or other stuff; in either case indicating, as did all ornament, the period of the doing.

Glazing in painted squares or diamonds, "quarries," as they are called, was an expedient common to all Gothic periods. In the thirteenth century the square form prevailed,



Fig. 63.—Part of a Quarry Window.

In the Museum, the bequest of Henry Vaughan, Esq. (No. 936–1900).



and the pattern consisted only of a rosette, or some very simple form, strongly outlined, and thrown into relief by cross-hatching the ground. The practice at first was to leave always a margin of clear glass between the hatched ground and the leads, which resulted in a lattice of clear glass enclosing tinted spaces diapered with white pattern.

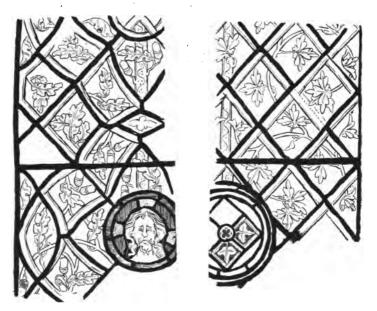


Fig. 64.—Portions of Decorated Grisaille and Quarry Windows in Merton College, Oxon.

From tracings in the Art Library of the Museum.

Towards the second period of glass-painting it was realised that a band on two sides of the quarries only was enough, when they were put together, to define the shape, and at the same time give a band-work of eventually interlacing lines. There is no mistaking the relation of this second form of quarry work, with quasi-natural foliage

growing through, to the grisaille of the period (Fig. 64), glazed often in lines not far removed from the straight.

In the third period marginal lines were omitted altogether, the hatched background having gone quite out of use. The pattern, now confined as a rule to the centre part of the quarry only, was very delicately traced in outline, and distinguished from the ground by yellow stain; but, whatever the device upon it, it was always overpowered by the strong glazing lines, for the most part diamond-shaped.

The "quarry" survived during the Perpendicular period as a cheap, and not very significant, form of white glass.

After the Gothic period, quarry work soon gave way to plain glazing in geometric pattern.

In Germany and Italy roundels of white glass took commonly the place of quarries.

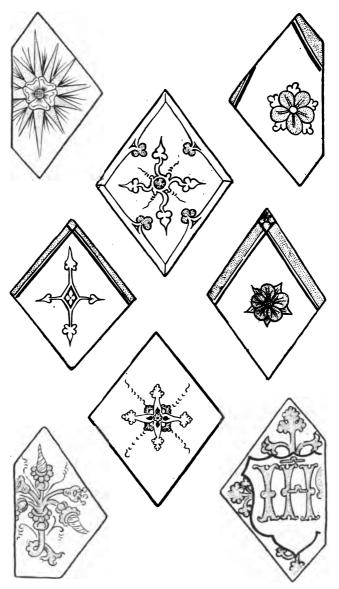
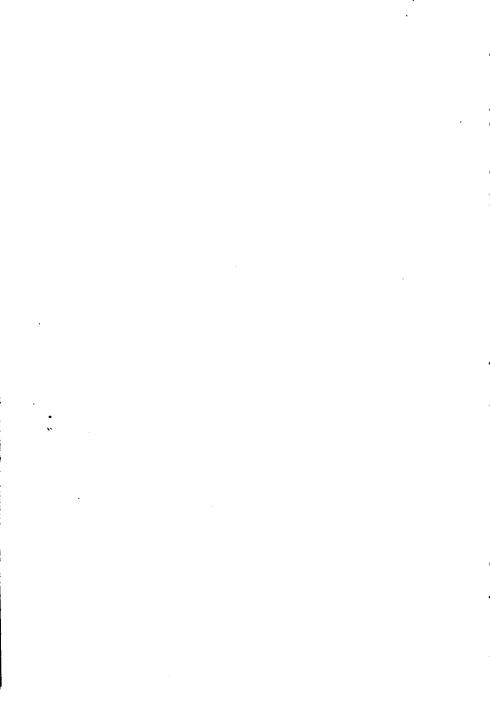


FIG. 65.—EXAMPLES OF COMPARATIVELY LATE QUARRIES. In the Museum, the bequest of Henry Vaughan, Esq. (No. 935-1900).



## IX.

# IN REFERENCE TO MATERIALS.

The quality of material betrays the date of glass. Its texture tells something; but it is mainly by its purity, and its more even and more mechanically perfect manufacture, that an artist traces the progress of time.

The glass of the twelfth and thirteenth centuries is a long way from colourless, though it may pass for white; there was always iron enough in the sand used in its making to give it a decidedly greenish or yellowish tint. Neither was it quite transparent (it was horny rather) nor of equal thickness throughout the sheet, nor free from bubbles, streaks, and other faults of manufacture which made for beautifully broken colour. In coloured glass there was no certainty of tint; the oxides used for staining it were found in an impure state, and used very much in the state in which they were found; and there were no scientific means of determining precisely to what any accidental variation in the shade of colour was due. The makers worked less from knowledge than by conjecture.

The difference of make between the earliest and later material is most plainly apparent in ruby glass. This was in the beginning extremely varied and extraordinarily luminous, owing, it seems, to flakes of red held as it were in suspension in the white pot-metal. The process of manufacture must have been quite different from that employed in the latter half of the fourteenth century, when a comparatively thin layer of ruby gave a proportionately stronger but much less subtle and beautiful colour.

The colours of the twelfth century palette were:—Ruby (copper oxide); Blue (oxide of cobalt) from deep sapphire to greyish—duller shades resulted from impurities in the cobalt;

Green (iron) from apple green to deep moss green, olive and bottle green; Yellow (iron), deep, strong and rather brassy; Purple-brown (manganese or manganese and iron) used in its paler shades for flesh tint. These were the principal colours in use. Turquoise-blue (copper) and green glass of emerald-like quality (copper) were used also, but not in great quantities. It was a long while before this palette was added to, though lighter and brighter shades of colour were produced.

The yellow produced in the fourteenth century by silver stain was markedly different in quality from pot-metal yellow; it was purer, more lemon in the pale shades, more orange in the deep. As ruby became flatter and less streaky, so blue became purple and more neutral. "Coated" blue began to appear in the fifteenth century, and was followed by other coated glass; ruby on blue, for example, producing a purple or violet, not otherwise to be obtained in glass. It is obvious how by coating one colour with another great variety of tint may be arrived at. The colour in some late glass is said to be in three or even more layers.

The discovery of the early sixteenth century was a pale rose pink, quite different from pale ruby, and not produced from copper, but from gold, the colour familiar in a rather tawdry variety of Victorian table glass.

The preponderance of red and blue in a window marks the Early period. In the Decorated, yellow and green assert themselves. In the Perpendicular, red and blue are, as it were, diluted with white; and we get also purple, often in association with pale blue and abundance of white; this last now of a purer quality (less green or yellow) and more silvery looking. Painting upon clear glass belongs to the Renaissance period. Absolute transparency was in fact the final achievement of the glass-maker; but, whatever its merits for all practical purposes, the textureless material was never of any great use to the glass-painter.



Fig. 66.—Subject Panel from a Window, designed by Sir E. Burne-Jones, Bart., and executed by Messrs. Morris & Co.

In the Dining-Room of the Museum.



## THE LIGHT OF HISTORY.

A word as to the zig-zag and unequal course of the glazier's and glass-painter's art.

An art so absolutely belonging to ecclesiastical decoration as stained glass, naturally followed the fortunes of the Church and its patrons. Its encouragement was often not so much a consequence of national progress as of the fame of a shrine, the prosperity of a bishopric, or the pride of a patron. Neither war nor pestilence seems to have hindered its development: the more men died, the greater the need of propitiating the Church; and how could that better be done than by the donation of stained glass windows?

They are distributed, accordingly, over the various countries in which glass-painting was practised in a manner which strikes us, in our ignorance of local history, as most capricious. There is a surprising wealth of glass in places now of so little importance that one wonders how ever it came there; but it is seldom that the history of the place does not throw some light upon our perplexity; and where that is not the case, its occurrence may fairly be put down to the personal account of some art-loving ecclesiastic or pious donor whose name we have failed to trace.

The art seems to have arisen in France, perhaps as early as the reign of Charlemagne, and the culture of his Empire stands for that of Western Europe. The Crusades, at the same time that they gave an impulse to ecclesiastical art, relieved the West of some of its most turbulent spirits, and left the artistic and religious portions of the community comparatively at peace. Some glass we might almost

attribute directly to the Crusades, that for example at Clermont, where the First Crusade was preached, and at the Sainte Chapelle, which was built by Louis IX. after his return from the Sixth.

The earliest glass extant is to be found always in places of historic interest. It was at St. Denis that, in the twelfth century, Louis VI. and Abbot Suger, his intimate adviser, were educated; Reims was where the French Kings were consecrated; Chartres was a famous place of pilgrimage; Bourges was an Archbishopric; and Le Mans and Angers were the capitals of hereditary countships.

The very early glass, of which rare vestiges are to be found in England, is of French manufacture; and its importation is only what might have been expected, considering the close connection at the time between the two countries.

The growing prosperity of the glazier's art in France corresponds with the settling down of the country as the thirteenth century advanced; what more natural than that it should thrive under a king who came to be canonised. Cities of importance, like Auxerre and Amiens, their communal charter granted to them, burst out into patronage of the art; as did also Poitiers, the capital of Poitou. It is not, however, only in famous towns that good glass is to be found. We come occasionally in quite out-of-the-way places, as for example, hidden in the forest of Compiègne, upon remains of great interest; but then the nunnery of St. Jean-aux-Bois was founded by the mother of the French king.

In England domestic war was not so unfavourable to art as might have been expected. It was the policy of Simon de Montfort to make friends with the towns, which thus grew in importance, further developed when the country settled down under Edward I. Our important thirteenth century glass is ound in cities of importance—at Canterbury, since Becket's

murder visited by pilgrims even from abroad; at Salisbury and Lincoln, where parliaments were held; and at York, whose archbishop, just about the time when the Five Sisters were being put up, was carrying on the government of the country during Edward's absence at the Crusades.

What early glass there is in Germany is to be found at places like Cologne and Strasburg, important towns of the Rhenish Confederation, enjoying special privileges and exemptions; but it is not until towards the end of the thirteenth century, and the beginning of the second phase of design, that German glass asserts its importance; about the period, that is to say, when Free Cities of the Empire were mighty enough to form Leagues with which princes and other potentates had to reckon. No wonder if such cities, the seats of industry, the centres of thought, the refuges from war and its unrest, prided themselves upon the glorification of their churches with richest stained glass! Strasburg, famous for its glass, was one of the most flourishing of the Imperial towns, Nuremberg was another, greatly favoured by the Emperors, who made it their residence and held diets there; and Regensburg and Freiburg were important trade centres.

The prevalence of English glass during the fourteenth century may be accounted for by comparative peace. Here, too, towns were acquiring charters and privileges. Much of the Decorated glass in York Minster (a treasure house of this period) must have been put up under William de Melton, an archbishop who mixed himself up with civil affairs, and was at one time Treasurer of England. The fine glass at Gloucester is subsequent to the burial there of the murdered Edward II. and the inflowing of pilgrims and donations to his shrine.

France was less prolific of glass while the Hundred Years' War was being carried on within her borders, and the country was being ravaged by the Black Death; but even during that

time good work was done there; at Troyes, where famous fairs were held; at Chartres and Evreux, both important sees.

We find in Italy, notwithstanding documentary mention of very early glass at Monte Cassino, and the fame of the glass manufacture at Murano, few windows even of the fourteenth century; and the occurrence of what does exist is not easily accounted for. At the shrine of St. Francis, at Assisi, it explains itself. There seems less reason why, at this particular period, it should be found any more at Florence and Pisa than at other important towns equally in touch with glass-painting countries. It seems, indeed, quite possible that this Italian glass, differing only in design and not in manufacture from contemporary work elsewhere, was executed, as some of it is said to have been, either in Germany, or by German glass-painters.

The industrious production of late Gothic glass in England corresponds with the concession of privileges to the commons by Henry IV., and the occupation of the turbulent nobles at the seat of war in France under Henry V. Some small proportion of glass may be put down directly to the French war, All Souls at Oxford having been founded to provide masses for the souls of its victims. The glass at Great Malvern may or may not owe something to the Priory having been subject to Westminster Abbey. But good Perpendicular glass occurs in smaller places too, and is, in fact, too prevalent in this country to be accounted for in detail.

In Germany there is also abundance of Late Gothic work. The war of the Margraves, it is true, broke the power of the cities; but the Empire prospered, and became under Maximilian, the most important of European States; and this prosperity is chronicled in glass. At Nuremberg, which had to bear the brunt of the war, there is a comparatively quiet time in glass-painting until Maximilian's time; but there is good work at Ulm, a town in the height of its prosperity in

the fifteenth century, and frequently at the head of Swabian Leagues; and at Freiburg, consequent in date at least to the founding of the university; and again at Cologne, always a place of both ecclesiastical and commercial importance.

The Late Gothic glass in France suffered from the Hundred Years' War, at the end of which the land from the Somme to the Loire was a waste. It was not until towards the end of the century that the country began to right itself; and soon after that the movement of the Renaissance began, at a time when in Germany and with us the Mediæval spirit still survived. The quality of the Late Gothic glass at Bourges explains itself by its position in the chapel of Jacques Cœur, the counsellor of Charles VII. As for the glass at Rouen, it is directly due to the Cardinals d'Estoutteville, and the two Georges d'Amboise, who from the middle of the fifteenth to the middle of the sixteenth century made that city a centre of art.

It was the fashion of the sixteenth century for great people, from the Kings downwards, to patronise the arts, and amongst them glass-painting; and the origin of conspicuously fine windows is usually to be traced to a munificent patron; at the church of Brou, to Margaret of Savoy, at Ecouen and Montmorency, to the family of the great Constable, at Liège and Brussels, to Charles V., who also, by his succession to the Spanish throne was directly or indirectly responsible for the introduction of the art into Spain—probably the work of Netherlanders, though distinctively Spanish in design. There is no trace of glass there during the period of Moorish rule.

The noblest glass of the Renaissance is to be found in France and the Low countries, whence the best of what we have in England was derived, the windows, for example, at Lichfield, and at Hanover Square; an exception occurs in the windows at King's College, Cambridge, contracted for by the King's glazier, if we are to believe the "indentures"; but at least two Flemings are mentioned as having worked on them.

The relative rarity of Renaissance glass in Italy is no doubt to be attributed to the practice of mural painting, with which coloured glass would seriously have interfered. It is a question, even, whether it may not in some cases have been removed to give light for pictures. The invitation of William of Marseilles to Arezzo points rather to a dearth of competent Italian glass painters. In the case of Renaissance windows, by the way, we have often the record, faithful or false, of the name of the artist, by this time a person of some importance; and the whereabouts of good glass may sometimes, as at Beauvais, be traced to the fact that an able artist in glass lived there; but, then, there is that fact to be accounted for.

The great workshops in each country followed local traditions, and formed, it may be said, schools of design, where distinctive, if not always readily distinguishable, work was done. There is a marked difference between the output of Normandy, of the Limousin, of the Isle de France, and of Champagne. The glass at Strasburg and thereabouts is quite Rhenish and unlike other German work; and Burgundian glass has always a robust flavour of its own.

The smaller amount of Renaissance glass to be found in Germany, is due partly to the lingering there of the Gothic spirit, and partly to the Reformation, to which we also owe no doubt a subsidence in the fervour of church decoration, and a consequent lull in glass-painting. In Protestant Holland, however, the Burgomasters of reformed cities of the United Netherlands, continued at Gouda the wonderful series of windows begun by Philip and Mary, and the Catholic Bishops; and again in Troyes, at one time a Huguenot centre, there was a sort of seventeenth century after-glow of the art which had already in the sixteenth begun to sink below the horizon. It is perhaps not strange that domestic glass-painting should have flourished in the homely atmosphere of the little Swiss Confederacy.

It is interesting thus to enquire into the connection of events which cannot but have influenced the fortunes of stained glass; they throw some light on the art, but do not by any means explain all that is obscure. They must be taken for what they are worth. It would be dishonest to pretend that they make clear the way to knowledge: they do but indicate it. The course of veritable history never did run smooth.

# INVENTORY OF STAINED GLASS EXHIBITED IN THE MUSEUM.

Arranged approximately in chronological order.

- Note.—The specimens of Stained Glass on loan to Provincial Schools and Museums are not included in this List.
- 2762 1855 Figure of a king. Part of a Jesse window. Ca. 1300. English.
- 5461 1858 Figure subject. Early 13th century. English.
- 5458 1858 Medallion subject. 13th century. English.
- 2282 1900 Circular tracery light with quatrefoil in grisaille. English. Note.—From Southwell Cathedral.
- 2273 1900 Heraldic shield. Note.—The Arms of the Bures family.
- 5814 1858 Fragment of a border. 12th or 13th century. French.
- 5460 1858 Medallion subject. 13th century. French.
- 1223 1864 Portion of a Medallion window with subjects set in geometric diaper. 13th century. French. Note.—
  From the Saint Chapelle. In the lower Medallion, two subjects separated only by the iron bar between them.
- 1223 1864 Panel. 13th century. French.
  - 00
- 1221 1864
- 12 1865
- Two panels of Mosaic diaper enclosing each a Medallion with remains of figure work. A segment of a light with border and Mosaic diaper, in which is set a quatrefoil figure Medallion. 13th century. French. Note.—From the Sainte Chapelle, Paris. The Medallion cuts across the border.
- 1222 1864 Portion of a light with Mosaic diaper, border, and oddly-shaped Medallion subjects. 13th century.

  French. Note.—From the Sainte Chapelle, Paris.
  - 8 1881 Fragments of two figure subjects with borders and diaper. 13th century. French. Note.—From the Sainte Chapelle, Paris.
  - Narrow lights with ten figures of prophets in semicircular Medallions, and two kings. 13th century. French. Note.—From the Sainte Chapelle, Paris; apparently portions of a Jesse window.
- 2290 1900 Fragment of grisaille. 13th century. English. Note.— From Chartham, Kent.
- 5465 1858 Two kneeling angels. 13th or early 14th century. French. Note.—Exceptional prevalence of green.
  - 932 1900 Top portion of a grisaille light. 14th century. English. Note.—Said to have come from York.

- 936 1900 Panel of Quarries. 14th century. English. Note.— Said to have come from Bury St. Edmunds.
- 2309 1900 Panel of Decorated quarries. 14th century. English
- 2289 1900 Two small pieces of Decorated tracery.
- 2294 )
  2283 | 1900 Circles of Decorated grisaille.
- 933 934 1900 Fragmentary panels containing each a small figure 934 under canopy. 14th and 15th centuries. English.
- 930 935 1900 Quarry panels. 14th to 16th centuries. English.
- 5459 1858 Circular tracery light with quatrefoil of ornament.

  14th or early 15th century. German.
  - 7 1881 Angel. Note.—Said to have come from the Sainte Chapelle, Paris, but has more the character of 14th than of 13th century work. Witness the crisping of the quatrefoil, the white flesh, and the colour generally. It is probably the border only, obviously early, which came from the Sainte Chapelle.
- 5464 1858 Pinnacle of a Decorated canopy on a ground of Mosaic diaper. 14th century. German. Note.—From Cologne.
- 5466 1858 Portion of a window with borders, diaper work, and circular figure Medallion. 14th century. German. From Nuremberg.
  - 940 1900 Panel of grisaille with central quatrefoil, in which is a head. First half of 14th century. French.
- 942 1900 Panel made up of Mosaic quarries, etc.
- 2279
- 2278 1900 Shields of arms. 14th and 15th centuries.
  - 947 <sup>J</sup>
- 2299 1900 Fleur-de-lis quarries. French.
- 2311 1900 Heraldic fragment. English. Note.—The Arms of Cranmer.
- 4484 1858 Figure subject (Annunciation). Italian. Note.—Said to have come from a church at Torcello.
- 2630 1855 Circular Medallion or tracery light with a "pelican in her piety." Ca. 1400. English.
- 4237 1855 Three perpendicular lights with figures and canopies complete—St. John the Evangelist, St. James the Greater, and the Prophet Zephaniah. About 1415.

  English. Note.—From the chapel of Winchester College.

#### INVENTORY OF STAINED GLASS. 148

- 8718 1863 Figure of St. Bartholomew under mutilated canopy. 15th century. English. Note.—From the Choir of Winchester Cathedral.
- 6905 1860 Shields of arms. 15th century. English. Note.-From the Strawberry Hill Collection. 6913
- 6917 1860 Shield in a garter. Ca. 1500. English. Note.—From the Strawberry Hill Collection.
- 6916 1860 Small tracery light with shield and grotesque supporter. 15th century. English. Note.—Strawberry Hill Collection.
- 928 1900 Panel of miscellaneous fragments. Chiefly of the 15th century. English.
- 2307 1900 Head of a small round arched light with heraldic device and side figures. Late 15th century.
- 2310 1900 Fragments of quarries, etc. Chiefly of the 15th century.
- 2266 1900 Panel of late Gothic quarries.
- 2286 1900 Fragment of late Gothic grisaille.
- 1900 Panels of fragments—figure and ornament. 14th to 16th centuries. English.
- 2305 1900 Tracery lights-fragments of grisaille.
- 939 1900 Panel of quarries.
- 293 1874 Figure subject. The Virgin and Child with the donor, Joanna of Arragon, and St. John the Evangelist in adoration. 15th century. Spanish.
- 1900 Panel of fragments. Chiefly 15th and 16th centuries. English and Flemish. Note.—A foot with splashes of ruby.
- 516 1892 Panel of plain quarries with ornamental border in white and stain. 15th century. Flemish.
- · 929 1900 Panel of fragments of various countries. Chiefly of the early 15th century.
- 5463 1858 Mosaic diaper pattern. 14th or early 15th century. German. Note.—Said to have been brought from Poissy, in France.
- 6914 1860 Kneeling figure of a knightly donor. Ca. 1450. Flemish.
- 1184 1864 Small panel with figures (the Virgin, etc.) in grisaille, on a coloured ground. Ca. 1470. Flemish or German.
  - Two small angels, each under a canopy, bearing a shield. Ca. 1490. Swiss or German.
- 2265 1900 Nine heads in a panel of blue.
- 2633 1855 Arms of a bishop or abbot. Ca. 1520. Flemish.

- 87 1896 Four armorial panels. 16th century. English. Note.— From Sizergh Castle, Westmorland.
- 2271 1900 Small circular subject—all in grisaille except for the blue of the Virgin's robe—cherubs in white upon yellow stain forming the background. 1534.
- 2270 1900 Small circular subject, Annunciation to Shepherds. Figures in white and stain upon a blue ground.
- 2272 1900 Circular subject, Crucifixion, in colour.
- 749 1902 Panel with St. Mary Magdalene and some Renaissance fragments. 16th century.
- 634 1902 Subject with lifesize figures, Adoration of the Magi.

  Early 16th century. Italian. By William of Marseilles—from the cathedral at Cortona.
- 1201 1872 Subject, Crucifixion. 16th century. Italian. From a church at Bologna. Note.—In a state of decay.
- 252 1866 Subject panel. 16th century. Italian. Note.—Obscure . with paint.
- 6915 1860 Kneeling figure of a knight with attendant St. John the Baptist. Ca. 1520. French.
- 2206 1855 Subject in three lights, Adoration of the Magi.

  Ca. 1525. French. Note.—Said to be from a church in Normandy.
- Three subjects from the life of St. Peter. Ca. 1530. French. Note.—Said to be from a church in Normandy.
- 941 1900 Small square panel of domestic glass, a figure Medallion (Hercules) set in arabesque ornament. All in grisaille and stain upon clear white glass. French or Flemish.
- 2210 1855 Two lights with figures of Guillaume de Croy, "Le Sage," and his wife, with shields of arms below.

  Ca. 1521. Flemish. From the church of Arschot.

  Note.—Abraded ruby in the shields.
  - Three-light window, The Last Supper extending across it. 1542. Flemish. (Lent by H.M. the King.)
- Panels of fragments, chiefly heads. Some arabesque in white and stain. 16th century. Flemish. Note.—
  Interesting examples of flesh-painting upon glass.
- 68
  69
  1899
  Two subjects, The Annunciation and Christ preaching.
  Ca. 1550. Flemish. Note.—Landscape painted on the blue background.
- 70 1899 Three Angels. Ca. 1550. Flemish.

- 5941 1858 Two-light window and its tracery. Figures of SS. Peter and Paul under a canopy extending across the two lights. Angels in the tracery. 16th century. German. Note.—The roundheaded light with its cusping in the glass, and the gothic canopy beneath, indicate the period of transition.
- 5467 1858 Fragment of a subject, the Flagellation. 16th century. German. From Cologne.
- 603 1872 Small subject, under a canopy, The Nativity. 16th century. German. Note.-On the pale blue background, with landscape in green stain, is painted the appearance of the angel to Joseph.

## DOMESTIC.

- 6918 1860 Round. The Adoration of the Magi as background to a shield of arms. Ca. 1550. German.
- Three rounds. St. Peter preaching, Death on the 5639 Pale Horse, St. John the Baptist preaching. Ca. 1520. 5640 } 1859 { Flemish. 5641
- 5645 Four rounds. Gideon summoning the Israelites to Battle, a Stabbing Affray, The Nativity, the Behead-5647 | 1859 ing of John the Baptist. 1530. Flemish. 5655
- 5659 / 1258 1855 Panel with subject, the Holy Family, in white and stain. After Dürer. German.
- 5634 1850 A round and fragments of border. Subject, Mary Magdalene washing the feet of Christ. Ca. 1530. German.
- 2204 1855 Small panel with redclad figure bearing the standard of Nuremberg. 1538. German. Note.—The blue glass of the background is painted with a landscape stained green, out of which the white buildings are abraded.
- 2306 1900 Panel, with shield of arms supported by an angel. 16th century. German.
- 6919 1860 Round, with arms in white and stain—the helmet only in steel-grey. 1546. German.
- 5646 1859 Round, Death of Lucretia. Ca. 1550. French.
- 5649 1859 Round, Domestic scene. Ca. 1550. Flemish.
- 945 1900 Rounds with broad borders, St. Christopher and St. Andrew. 16th century. Probably French. 946)
- 1251 1855 Panel, The Crucifixion. 16th century. Flemish.
- 2632 1855 Round, The Death of Absalom. Flemish.
  - 303 1874 Round, The Betrayal. 16th century. Flemish.

394 394 Panel. The Annunciation. 16th century. Flemish.

2285 1900 Three very small rounds with figures.

2211 1855 Panel, the arms of Zurich, with the arms of the Guild of the Camel (still existing) and border consisting of the shields of its members on a very minute scale.

1572. Swiss. Note.—Abrasion of glass of various colours and most delicate needlework in the painting.

2212 1855 The Seven Sacraments and a shield of arms. 1579.
Swiss.

5643 1859 Round, a card party. Ca. 1580. German.

601 1872 A shield with arms of a Counsellor of Berne with pikeman supporting it. 1587. Swiss. Note.—A typical piece of highly-finished work.

944 1900 Panel with arms and border and small subjects included in a curious canopy. 1592. Swiss.

2205 1855 Panel with two halberdiers, each standing astride over a small shield of arms. 1594. Swiss.

9052 1863 Armorial panel. 1597. Swiss. Note.—Very minute and delicate needle-work in the painting. Battle scene above canopy in the manner of the drawings in the Library.

2269 1900 Circular armorial Medallion. 1604. Swiss. Note.— Chiefly in enamel colour.

2268 1900 Circular armorial Medallion in abraded ruby, white, and enamel colour. 1608. Swiss.

1257 1855 Quarry window, with central cartouche enclosing a quartrefoil with subject, Ahasuerus listening to the chronicles of his reign. The outer quarries panelled with arabesque. Ca. 1615. Dutch.

2213 1855 Armorial panel. 1618. German (Nuremberg),

9057 1863 Armorial panel. 1618. Swiss.

9061 1863 The Building of the Tower of Babel. 1631. Swiss.

5943 1859 Quarry window with central shield of arms and mantling in blue enamel and yellow stain, enclosed in delicate arabesque scroll work, which runs through the squares. 1638. Dutch.

9059 1863 Panel, with small shield supported by man in armour and his wife. Ca. 1640. Swiss. Note.—Typical design, with typical small subject above.

604 1872 Kitchen scene. 17th century. German.

602 1872, Round. Heraldic. 1655. German.

3006 1857 Subject—Daniel before Nebuchadnezzar, with small shields of arms framing it. 1660. Swiss. Note.—The painting is heavy but the shields are skilfully painted.

9060 1863 Allegorical subject—Good and Evil contending for the soul. 1670. Swiss.

2274 2276 1900 Three small rounds. 1680, 1667, 1674. Swiss.

5942 1855 Crucifixion. Ca. 1700. French.

## MODERN ENGLISH.

- 780 1864 The Vision of Beatrice. Designed by N. H. J.
  Westlake. Executed by Lavers & Barraud. 1864.
- 781 1864 The Legend of Queen Dagmar. Designed by J. Milner Allen. Executed by Laver's & Barraud. 1864.
- 773
  774
  775
  776

  Penelope. Poet Chaucer. Dido, and Cleopatra. The God of Love and Alcestis. Designed by Sir E. Burne-Jones. Executed by Morris, Marshall, Faulkner & Co. 1864.
- 370 1865 Cupid and two heads. By J. T. Lyon. 1865.
- 369 1865 Heads of Philosophers. Designed by G. Moody. Executed by James Powell & Sons. 1865.
- 228 1865. The Potter at his Wheel. By R. Townroe. 1865.
- 229 1865 The Seal Engraver. By M. R. Elden. 1865.
- 230 1865 The Ploughman. By James Gamble. 1865.
- 435 1865 Jurisprudence. By Alfred Hassan. 1865.
- 515 1873 Charitas. By F. Ashwin. 1872.

## MODERN CONTINENTAL.

- 550 551 552 1869 Two Heraldic windowpanes, each with two shields and two supporters in armour. Modern copies of 16th century work. Originals in the Town Hall at Steinam-Rhein.
- 59 1844 St. Cecilia and St. Agnes. After Lucas van Leyden. Executed at the Royal Factory at Munich. Ca. 1840.
- 58 1844 Madonna and Child, designed by Antoine Beranger, executed at the Royal Manufactory at Sèvres. Ca.1840.
- 5468 1858 Holy Family. German.
- 8021 1862 Madonna and Child. Ca. 1860. Italian.
- 1786 1869 Figure subject in mediæval manner, by M. Léon Ottin. 1869. French.
- Copies of portions of an old German window in the church of St. Laurence, Nuremberg. (Exhibited at the Bethnal Green Museum)

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